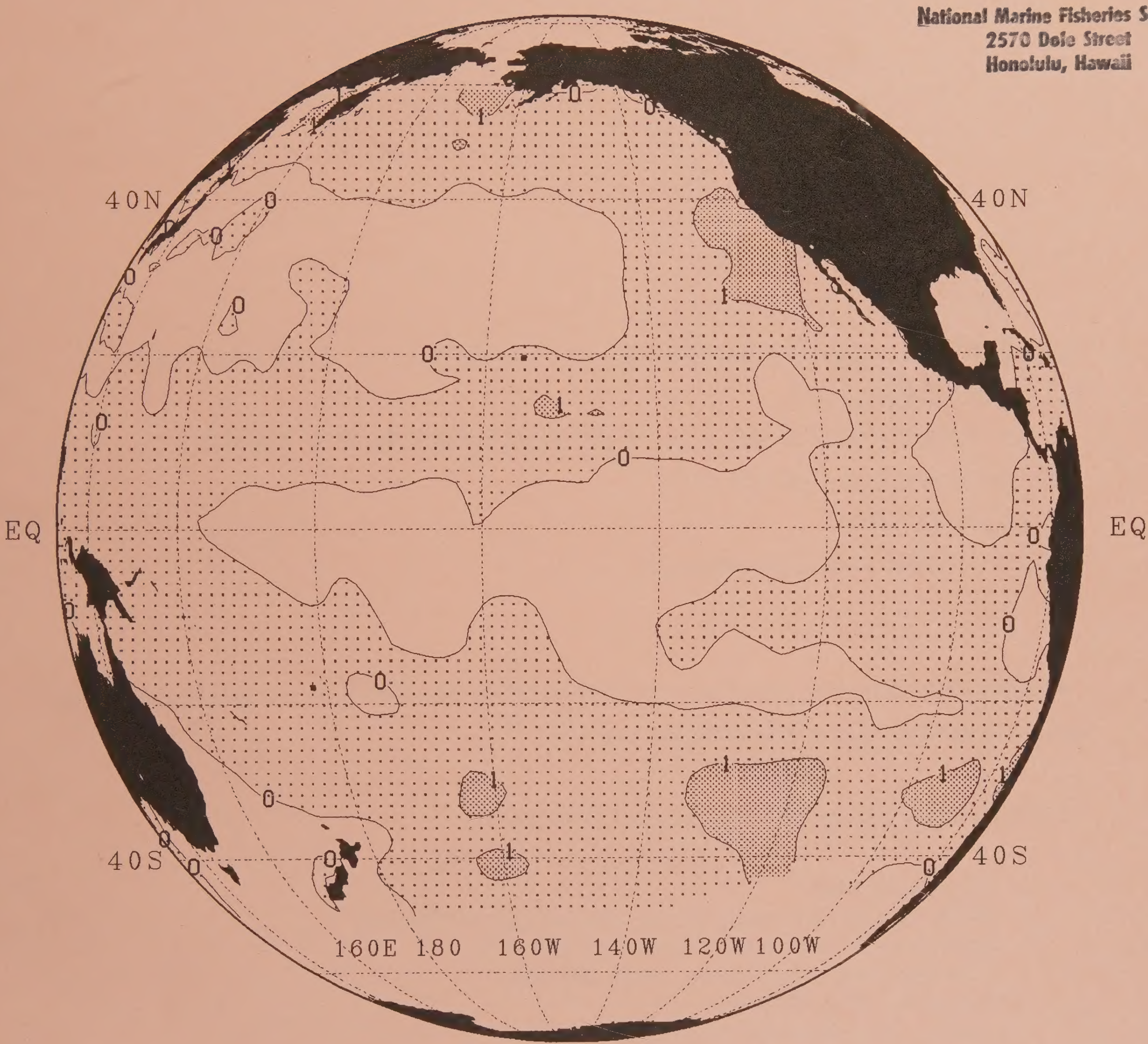
気象庁海洋月報

Monthly Ocean Report

March 1996 (No. 39)



El Niño Monitoring Center
Japan Meteorological Agency

気象庁海洋気象部海洋課
エルニーニョ監視センター

平成8年3月

気象庁海洋月報は、気象庁海洋気象部海洋課エルニーニョ監視センターで作成されています。
本月報に関する問い合わせは、

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表紙は、1996年３月の太平洋の月平均海面水温偏差図です。
陰影部は、平年より高温の海域を示しています。

The figure on the front cover shows the monthly mean SST anomalies for March 1996 in the Pacific Ocean.
Areas of positive anomalies are shaded.

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海況の特徴（1996年3月）

太平洋の海況

太平洋赤道域の海面水温は、160°Eから120°Wにかけて平年より低かったが、0.5℃以上低い海域は前月より小さくなった。110°W付近では平年より0.5℃以上高くなった。一方、160°E以西では平年より高い状態が続いたが、0.5℃以上高い海域は前月より小さくなった。エルニーニョ監視海域（4°S～4°N、150°W～90°W）の海面水温偏差は、-0.2℃だった（第1表、第1図、第6図）。

太平洋の赤道に沿った表層水温は、前月と同様に、水温躍層に沿って西部及び中部で正偏差、東部では負偏差となっていたが、130°W～120°W付近では負偏差がやや弱まった。（第9図）。

北太平洋では、35°Nに沿って165°Eから145°Wにかけて平年より0.5℃以上低かった。一方、北米西岸沖及び40°N以北では平年より高く、特に北米西岸沖では平年より1℃以上高かった（第6図）。

日本近海の海況

日本近海は、関東近海で平年より1℃以上低かった（第24図）。

黒潮は、九州・四国に接岸して流れた後、紀伊半島から東に向かい、上旬は八丈島付近で小さく蛇行して八丈島の南を、中旬と下旬は八丈島付近を経て房総半島沖を北東に流れていた（第27図）。

本州東方の親潮系の冷水は、沿岸寄りの分枝は40.5°N,142.5°E付近まで、沖合の分枝は38°N,145.5°E付近まで、それぞれ達していた（第26図）。

熱帯の気象

対流圏上層の大規模な発散の中心はほぼ平年の位置のニューギニア島からメラネシアにかけて存在した。日付変更線の赤道付近の対流活動は今月も平年より不活発だった。ニューギニア島付近と南半球収束帯（SPCZ）の対流活動は平年より活発だった。対流圏下層の貿易風は、太平洋西部から中部にかけては今月も強い東風偏差だった。南方振動指数（SOI）は、+0.7で、太平洋赤道域の海面気圧の偏差分布も東部が高く、西部が低いシーソーパターンになった。2月以降、周期40日程度の季節内変動がはっきりとしてきた（第1表、第3～5図、第12図）。

［気象庁長期予報課提供］

お知らせ

今月号から、海洋データ同化システム（ODAS）により求めた偏差図（第9図、第16～20図）は、1987～1995年の9年間の平均を平年値として計算し掲載します。

HIGHLIGHTS March 1996

Pacific

In the equatorial Pacific, sea surface temperatures (SSTs) continued to be below normal from 160°E to 120°W, however the area of negative anomalies less than -0.5 °C in March was smaller than in February. Around 110°W SSTs were more than 0.5°C above normal. SSTs were above normal west of 160°E. The area of the positive anomalies more than 0.5°C in March has become smaller compared with February. The SST index for region B (Fig. 1) was -0.2°C (Table 1 and Figs. 1 and 6).

The Depth of oceanic thermocline remained deeper than normal in the western and central part of the equatorial Pacific and shallower than normal in the eastern part of the equatorial Pacific. Subsurface temperature anomalies returned to near normal from 130°W to 120°W (Fig. 9).

In the North Pacific, negative SST anomalies less than -0.5°C were found along 35°N from 165°E to 145°W. SSTs were above normal north of 40°N and particularly off the west coast of North America, where positive SST anomalies greater than 1°C prevailed (Fig. 6).

Seas adjacent to Japan

Negative SST anomalies greater than 1°C were found off Kanto (Fig. 24).

The Kuroshio flowed along the coast of Kyushu and Shikoku, then eastward from Kii Peninsula. After passing south of Hachijo Island in early March, near Hachijo Island in middle and late March, it flowed northeastward off Boso Peninsula (Fig. 27).

Coastal and off-coastal branches of the Oyashio cold water extended southward to 40.5°N, 142.5°E and 38°N, 145.5°E, respectively (Fig. 26).

Atmospheric conditions in the tropics

The center of large scale divergence in the upper troposphere was located at normal position from New Guinea to Melanesia. Convective activities were weaker than normal near the equatorial date line and stronger than normal around New Guinea and SPCZ. In the lower troposphere, the easterly was stronger than normal from the western to the central equatorial Pacific. The SOI was +0.7. The sea level pressure anomalies showed a seesaw pattern which is positive in the eastern Pacific and negative in the western Pacific. Since February, intraseasonal oscillations have been evident for a period of 40 days (Table 1, Figs. 3-5 and 12).

[Prepared by the Long-range Forecast Division, JMA]

Note

Starting with this issue, anomalies in the figures (Fig. 9, 16～20) derived from the Ocean Data Assimilation System (ODAS) of JMA show deviations from 9 year averaged values for the period form 1987 to 1995.

海洋気象観測船「凌風丸」が西太平洋赤道域の海からの二酸化炭素の強い放出域を観測

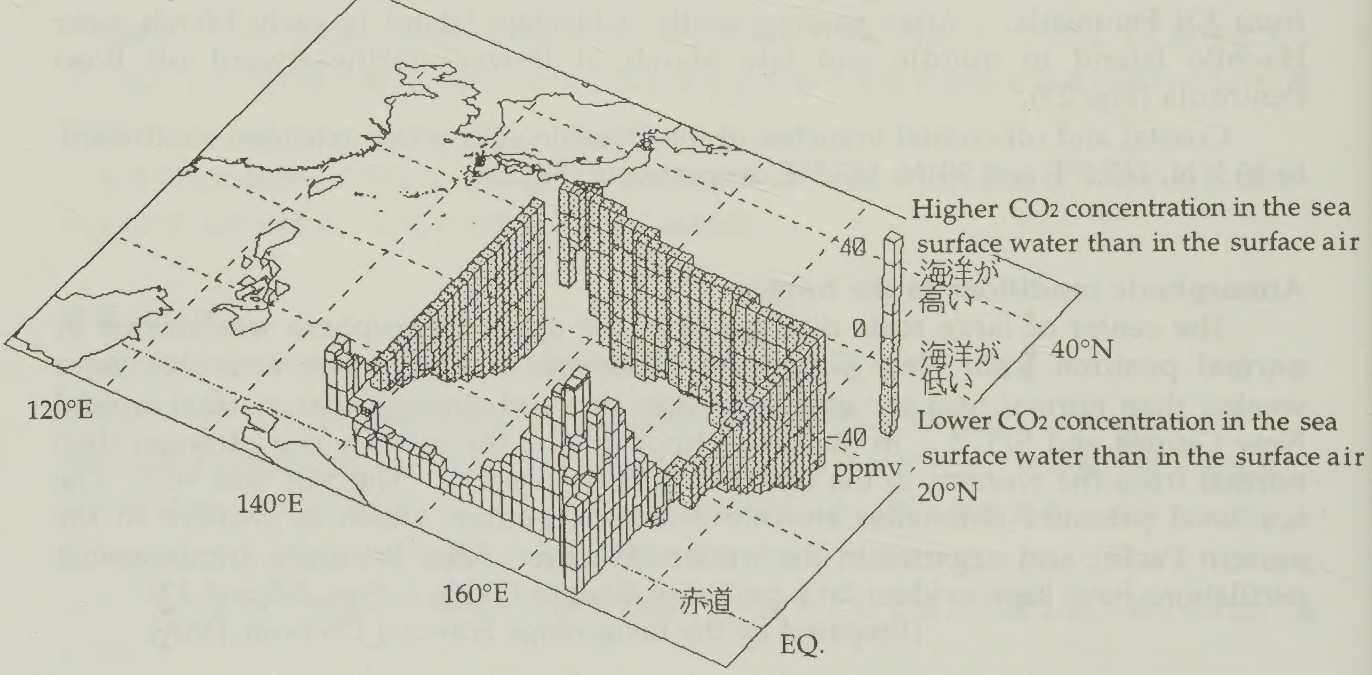
気象庁の海洋気象観測船「凌風丸」は、平成８年１月17日から３月14日にかけて、西太平洋において海洋観測を実施した。この航海においては、これまでの東経137度の測線に加えて、初めて東経165度の測線でも大気及び表面海水中の二酸化炭素(CO_2)の観測を実施した。

通常、太平洋赤道域において、海洋から大気へ放出される二酸化炭素は、東部海域に比べて西部海域で少ないが、今回、東部海域に匹敵する430ppmv以上の高い海水中のCO_2濃度が東経160度付近において観測された。この値はほぼ一定の大気中の濃度（約360ppmv）に比べて非常に高く、この海域が海洋から大気へのCO_2の非常に強い放出域となっていたことを示している（図A）。気象庁では、今後とも引き続き、同海域を含む西太平洋域で広範な観測を実施する予定である。

High CO_2 emissions from an equatorial area in the western Pacific observed by the R/V Ryofu Maru

The Japan Meteorological Agency (JMA) made marine observations in the western Pacific on board the R/V Ryofu Maru from January 17 to March 14, 1996. In this observation cruise, measurement of oceanic and atmospheric carbon dioxide (CO_2) along 165°E was conducted for the first time in addition to the observations along 137°E that have been carried out previously.

High CO_2 concentration (over 430ppmv) in the surface water was observed around 160°E in the western equatorial Pacific, which is much higher than that in the surface air (approximately 360ppmv). Oceanic emissions of CO_2 into the atmosphere are usually lower in the western equatorial Pacific than in the eastern equatorial Pacific, but the result of the observations showed that oceanic CO_2 emissions there equaled those in the eastern equatorial Pacific (Fig. A). JMA will continue to make observations in an extensive area of the western Pacific and will provide various information including that related to greenhouse gases.



図A　1996年１～３月に西太平洋で海洋気象観測船「凌風丸」が観測した洋上大気と表面海水中の二酸化炭素の濃度差。棒グラフは、海水中の濃度が高い場合、海洋から大気へ二酸化炭素を放出するので上向き（陰影なし）に、逆の場合、海洋が大気の二酸化炭素を吸収するので下向き(陰影あり）に示してある。

Fig. A　Differences between CO_2 concentrations in the sea surface water and in the surface air in the western Pacific observed by the R/V Ryofu Maru from January to March 1996. Upward bars indicate that the ocean was emitting CO_2 due to higher CO_2 in the surface water than in the surface air. Shaded downward bars indicate absorption of atmospheric CO_2 by the ocean.

DATE	SEA SURFACE TEMPERATURE AND ANOMALY (°C)								SEA LEVEL ANOMALY (cm)					
	Region D 14N-Eq. 130E-150E		Region A 4N-4S 160E-150W		Region B 4N-4S 150W-90W		Region C Eq.-10S 90W-80W		Yap 10N,138E	Rabaul 4S,152E	Majuro 7N,171E	Tarawa 1N,173E	Christ-mas 2N,157W	Santa Cruz 1S, 90W
APR 95	28.7	-0.1	28.8	+0.6	26.9	-0.2	24.6	-0.5	-6.7	9.5	10.6	0.7	-3.2	-10.9
MAY 95	29.2	+0.1	29.0	+0.5	26.2	-0.4	23.1	-0.8	-3.2	6.4	5.7	3.8	2.1	-7.5
JUN 95	29.6	+0.3	29.0	+0.5	26.0	-0.1	22.2	-0.5	-0.8	5.5	-0.6	2.2	-0.4	-2.4
JUL 95	29.5	+0.3	28.7	+0.2	25.3	+0.1	21.7	+0.1	5.3	10.7	1.0	-0.2	-5.6	-0.3
AUG 95	29.8	+0.7	28.4	0.0	24.3	-0.3	20.5	-0.1	3.8	15.1	6.7	-3.3	-8.9	-2.5
SEP 95	29.7	+0.5	28.1	-0.2	24.0	-0.6	20.7	+0.4	8.9	16.7	7.6	-2.7	-14.3	-2.7
OCT 95	29.8	+0.5	28.0	-0.4	23.9	-0.7	20.4	-0.3	13.0	15.5	4.6	1.1	-6.1	-4.9
NOV 95	29.7	+0.5	27.9	-0.5	23.9	-0.7	21.5	0.0	16.0	14.0	10.8	-1.5	-9.5	-3.2
DEC 95	29.5	+0.6	28.0	-0.2	24.2	-0.7	21.9	-0.7	13.5	17.2	3.5	1.0	-7.3	-6.2
JAN 96	29.0	+0.5	27.9	-0.1	25.0	-0.4	24.1	-0.2	10.3	14.7	8.2	5.8	-3.7	-4.5
FEB 96	28.6	+0.3	27.6	-0.4	25.7	-0.5	26.0	+0.3	10.9	14.6	6.2	4.8	-3.6	5.0
MAR 96	28.8	+0.4	27.8	-0.3	26.7	-0.2	25.9	0.0						

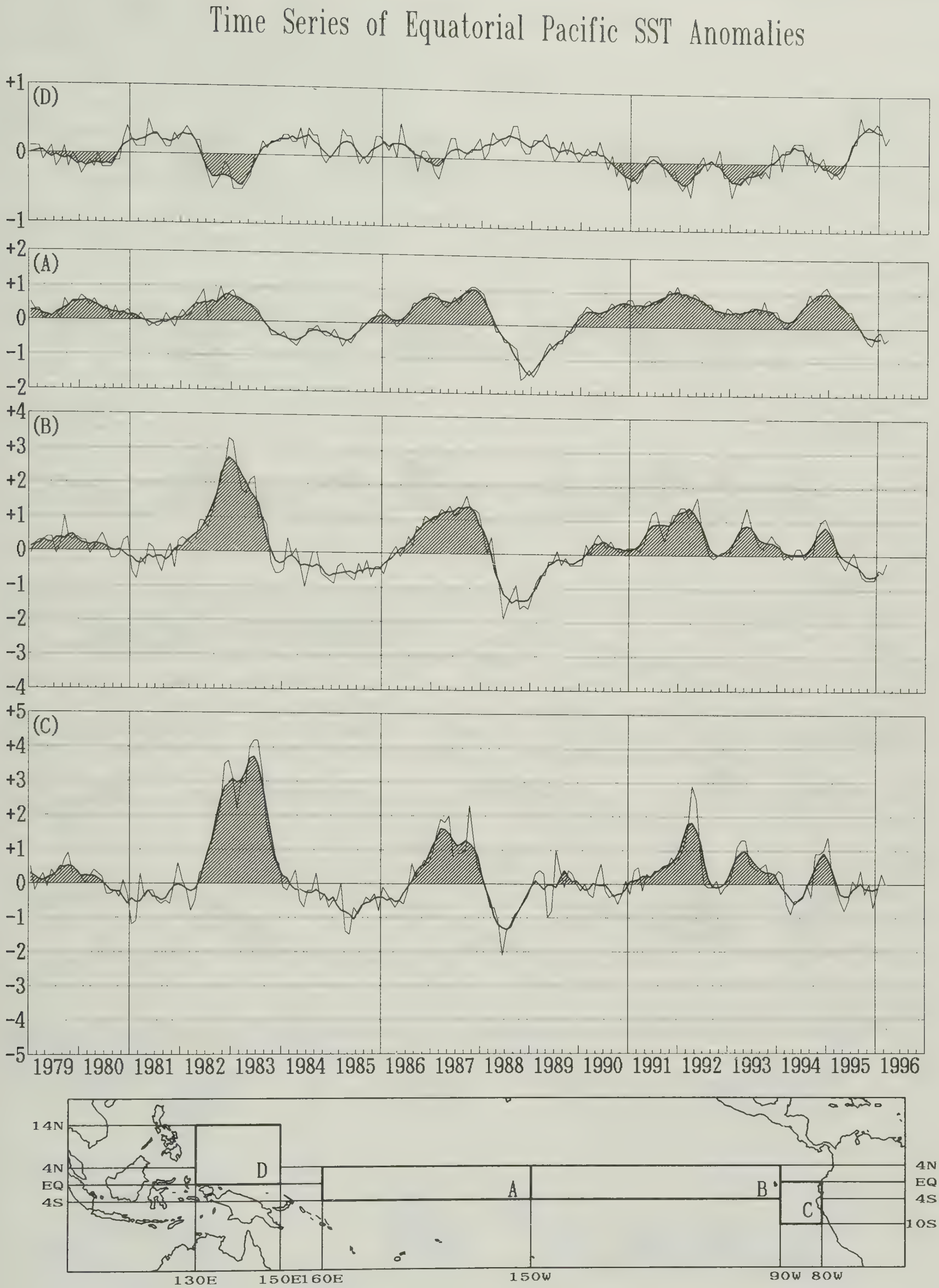
第１表（ａ）　エルニーニョ監視指数

Table 1 (a)　El Niño monitoring indices. Data sources are the El Niño Monitoring Center of JMA for the sea surface temperature and anomaly and SOC for ISLP-Pac, Department of Oceanography, University of Hawaii for the sea level anomaly.

El Niño monitoring indices

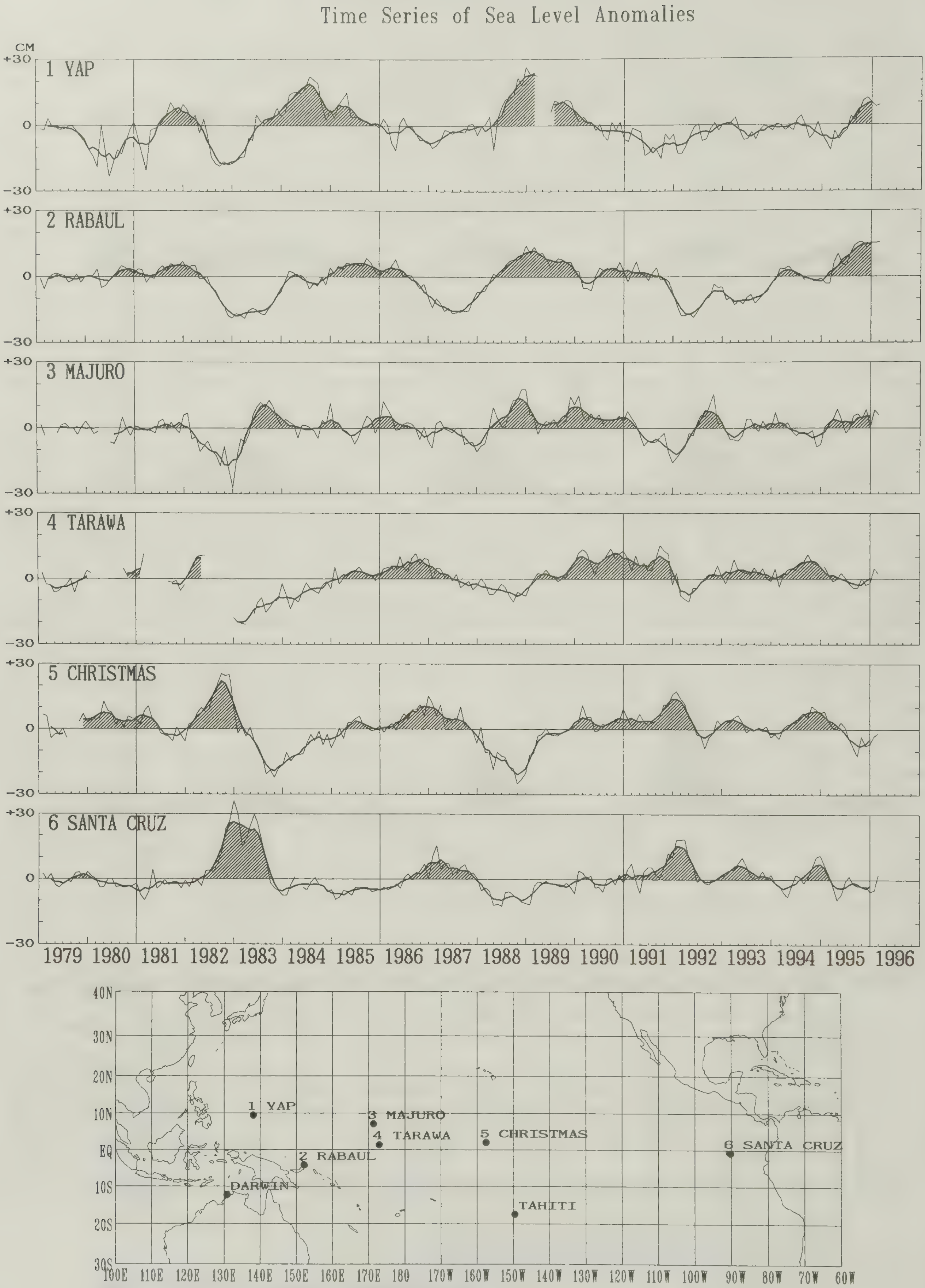
DATE	SOI	SEA LEVEL PRESSURE ANOMALIES		HIGH CLOUD AMOUNT INDEX			EQUATORIAL ZONAL WIND INDEX				
		TAHITI 17°33'S, 149°37'W	DARWIN 12°24'S, 130°52'E	HCLD-PH 20N-10N 110E-140E	HCLD-MC 5N-5S 110E-135E	HCLD-DL 5N-5S 170E-170W	U200-IN 5N-5S 80E-100E	U200-CP 5N-5S 180 -125W	U850-WP 5N-5S 160E-175W	U850-CP 5N-5S 170W-135W	U850-EP 5N-5S 130W-100W
APR 95	-1.4	-1.6	0.0	-1.1	-0.2	-0.6	0.7	0.0	0.0	-0.2	0.1
MAY 95	-1.0	-0.7	0.6	0.3	-1.2	0.0	-0.9	0.1	0.0	-0.1	0.2
JUN 95	-0.1	0.3	0.4	-1.8	-0.4	-0.7	0.2	0.2	-0.9	-0.4	0.6
JUL 95	0.4	0.4	-0.4	1.5	-0.1	-0.7	-1.1	0.0	-0.8	-0.8	0.3
AUG 95	0.0	0.4	0.3	0.3	0.0	-1.1	0.0	1.4	-1.3	-1.5	-0.9
SEP 95	0.2	0.4	0.0	1.4	0.7	-1.0	-2.0	1.5	-0.9	-1.0	-0.1
OCT 95	-0.3	-0.7	-0.5	0.1	0.2	-1.0	-0.7	0.6	-1.2	-0.7	0.1
NOV 95	0.1	0.1	-0.1	0.1	1.4	-1.2	-2.1	0.8	-1.1	-0.8	-0.8
DEC 95	-0.5	-0.9	0.0	4.0	1.2	-1.2	-0.3	-0.1	-1.0	-0.3	0.3
JAN 96	0.8	1.0	-0.7	1.6	1.5	-1.3	-1.0	0.8	-1.2	-1.2	0.0
FEB 96	0.1	-0.3	-0.5	1.7	1.4	-1.1	-0.7	0.4	-1.1	-1.4	-0.6
MAR 96	0.7	1.0	-0.3	0.3	-0.4	-1.2	-0.2	0.0	-1.1	-1.5	-0.3

第１表（ｂ）　エルニーニョ監視指数（続き）
Table 1 (b)　El Niño monitoring indices (continued).
Data sources are the Long-range Forecast Division of JMA for the atmospheric conditions.



第1図　太平洋赤道域の海面水温偏差時系列図

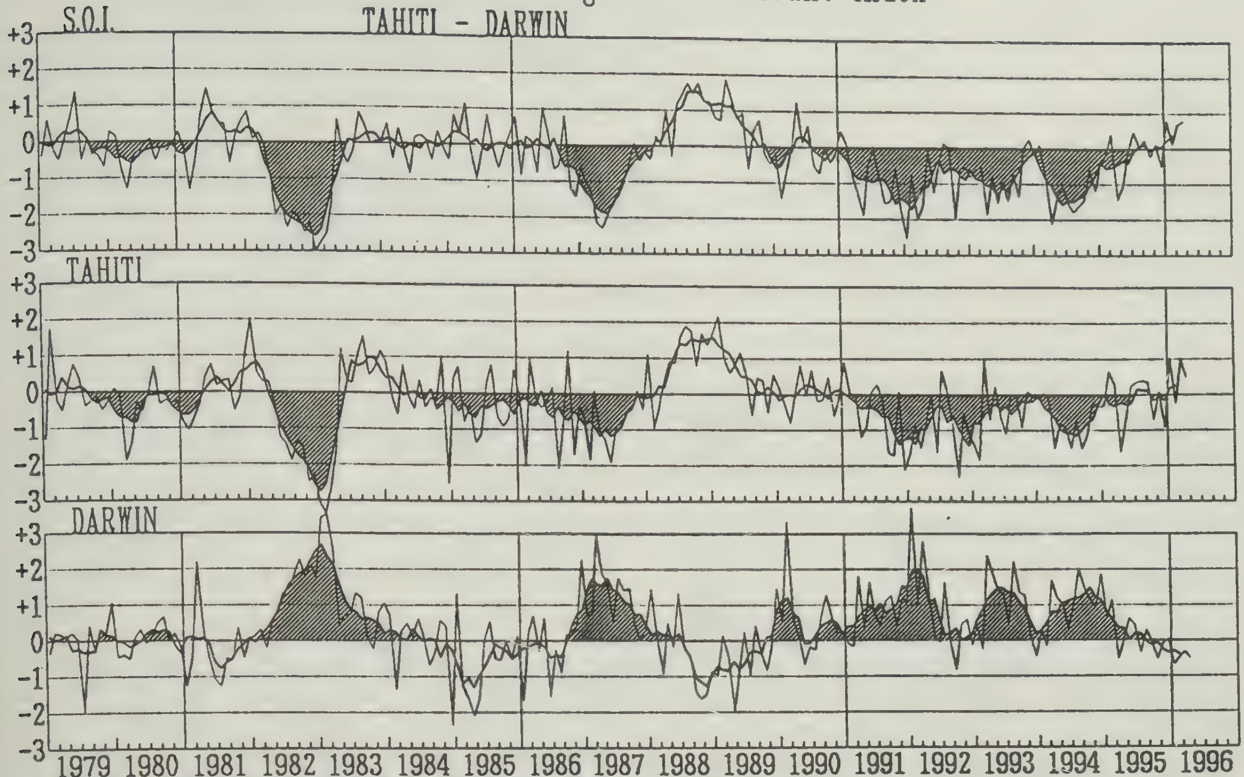
Fig.1 Time series of monthly mean SST anomalies (°C) in the equatorial Pacific Ocean for the areas indicated at the bottom. Thin lines show the monthly means and thick lines their 5-month running means. Positive anomalies (A, B, C) and negative anomalies (D) are shaded. Anomalies are computed from the JMA climatology (1961-1990).



第2図　太平洋月平均海面水位偏差時系列図

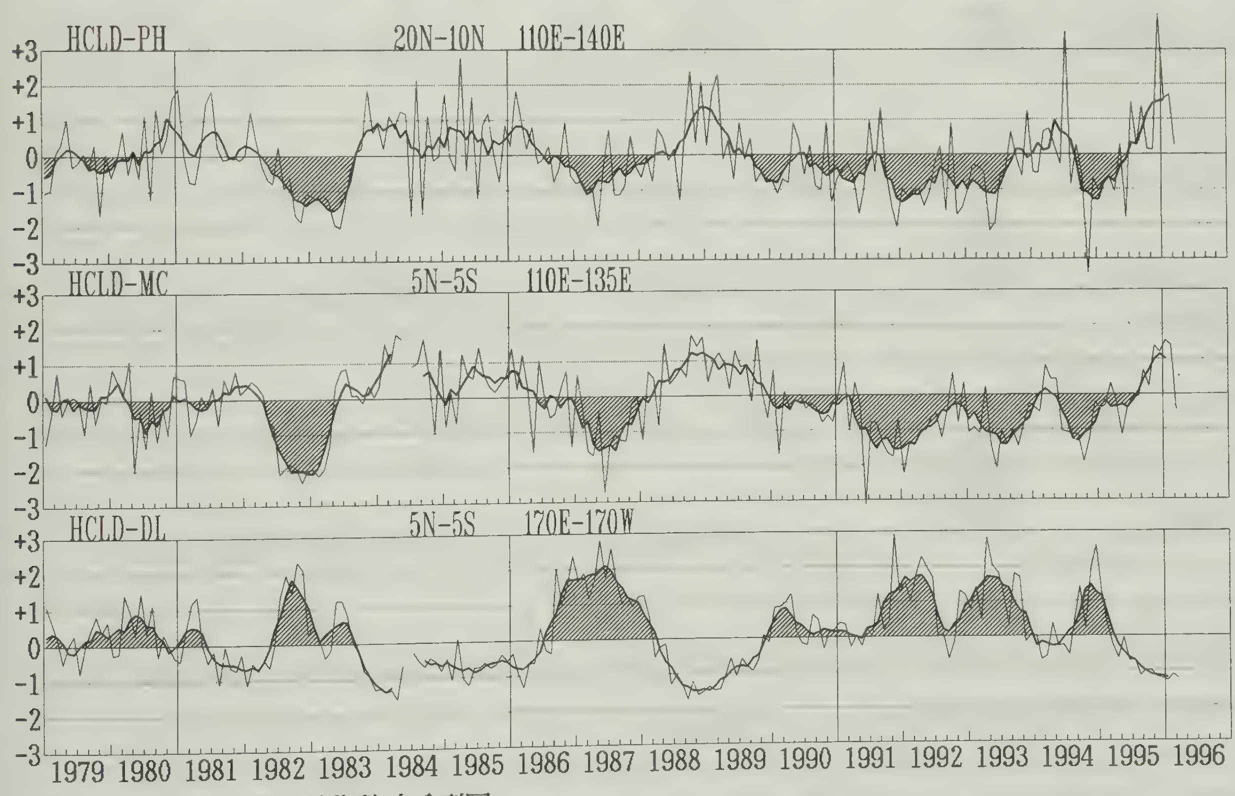
Fig.2 Time series of sea level anomalies computed from 1976-1990 monthly mean values obtained from the stations indicated at the bottom. Thin lines show the monthly mean and thick lines their 5-month running means. Positive anomalies are shaded.

Time Series of SOI and High-Cloud Amount Index



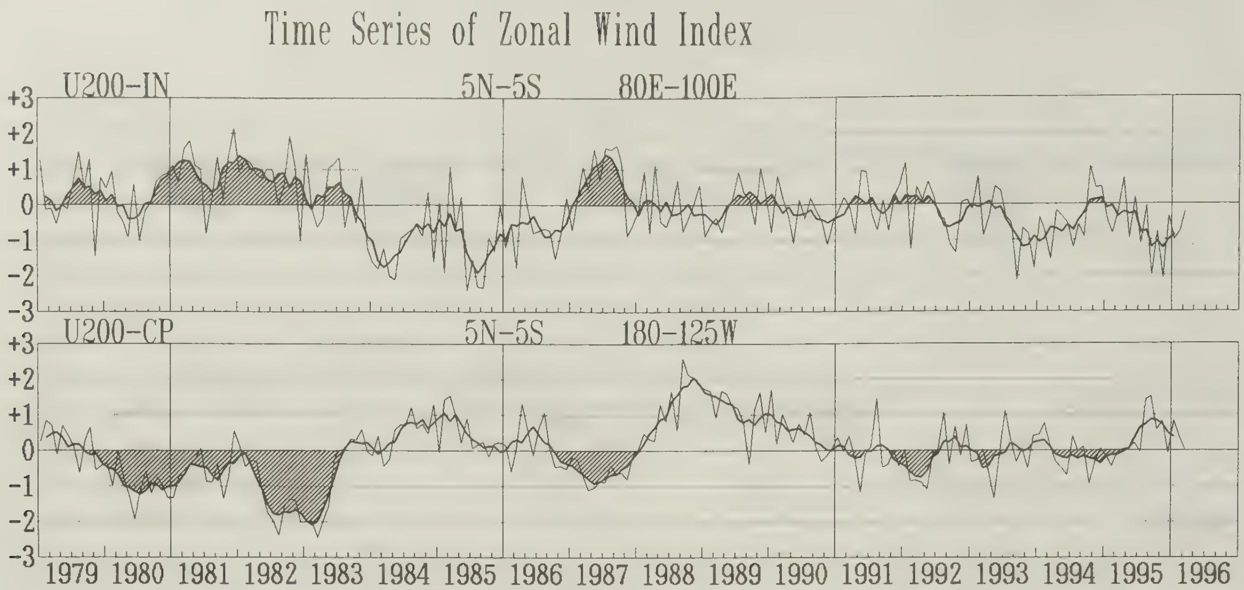
第3図　南方振動指数及び海面気圧偏差時系列図

Fig.3 Time series of the Southern Oscilation Index (top) and monthly mean sea level pressure standardized anomalies at Tahiti (middle) and Darwin (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Negative anomalies (top, middle) and posotive anomalies (bottom) are shaded. Normals and standard deviations are computed from 1961-1990 base periods. Data sources are the Long-range Forecast Division of JMA.



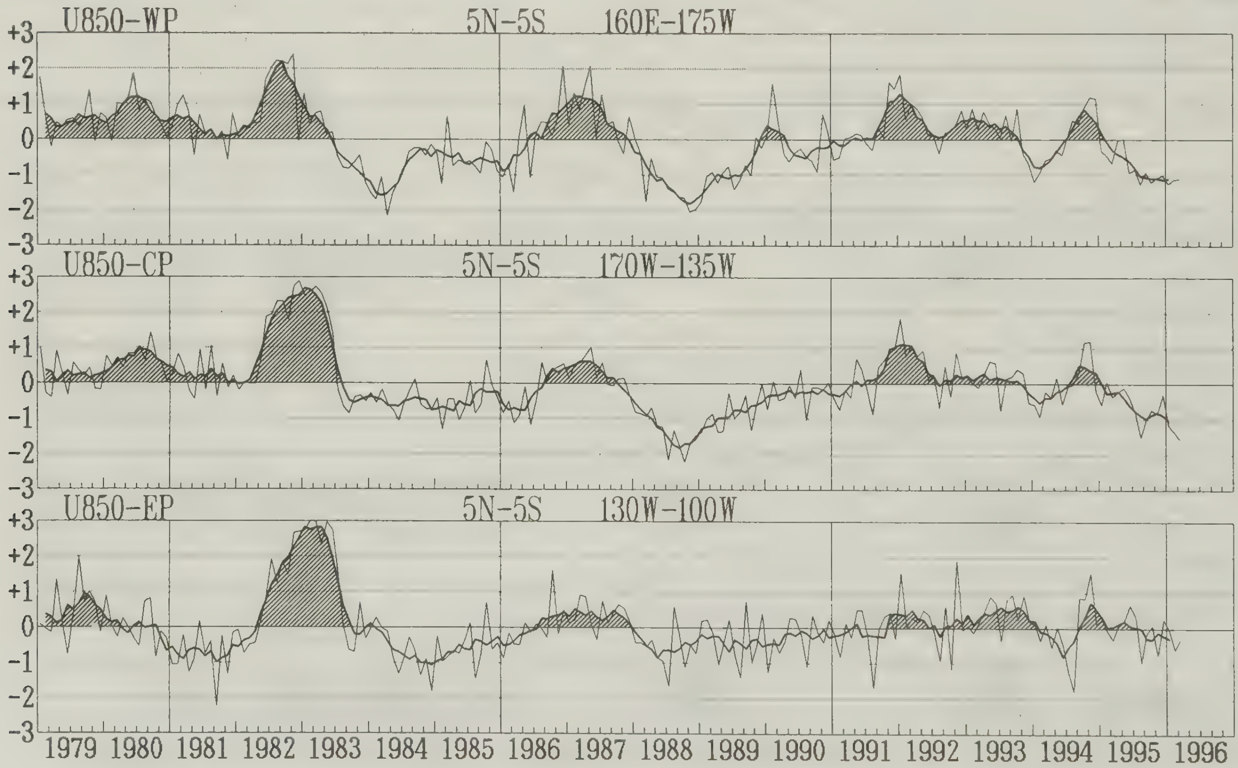
第4図　月平均上層雲量指数時系列図

Fig.4 Time series of high-cloud amount index averaged over the area 20°N-10°N, 110°E-140°E (top), 5°N-5°S, 110°E-135°E (middle), and 5°N-5°S, 170°E-170°W (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Negative anomalies (top, middle) and positive anomalies (bottom) are shaded. Normals and standard deviations are computed from 1978-1990 base periods. Data sources are the Long-range Forecast Division of JMA.



第5図-1　赤道域東西風指数(200ｈＰａ)時系列図

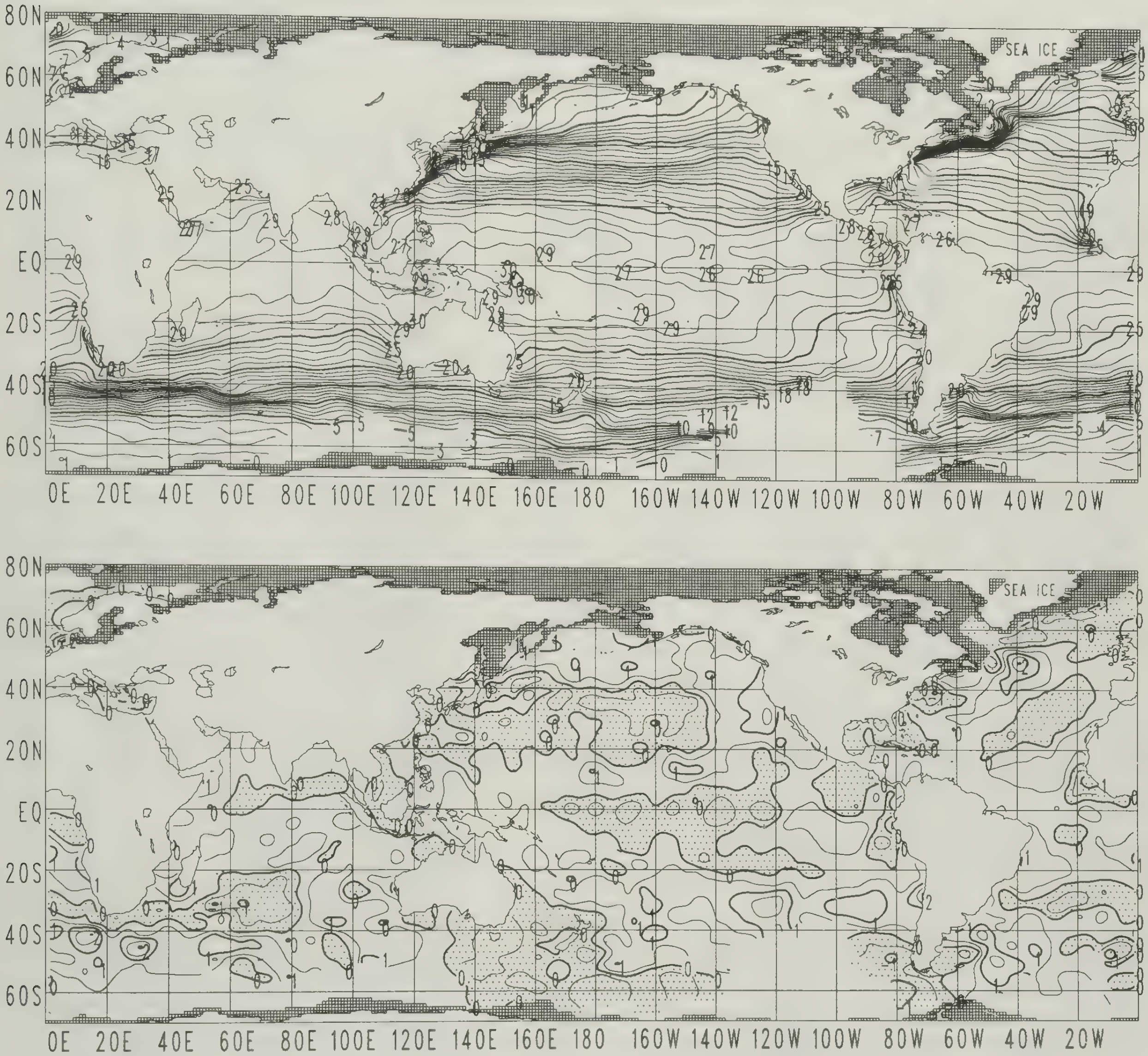
Fig.5-1 Time series of 200hPa zonal wind index averaged over the areas of 5°N-5°S, 80°E-100°E (top), and 5°N-5°S, 180°-125°W (bottom).
Thin lines show the monthly mean and thick lines their 5-month running means.
Positive anomalies (top) and negative anomalies (bottom) are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.
Data sources are the Long-range Forecast Division of JMA.



第5図-2　赤道域東西風指数(850ｈＰａ)時系列図

Fig.5-2 Time series of 850hPa zonal wind index averaged over the areas of 5°N-5°S, 160°E-175°W (top), 5°N-5°S, 170°W-135°W (middle), and 5°N-5°S, 130°W-100°W (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Positive anomalies are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.
Data sources are the Long-range Forecast Division of JMA.

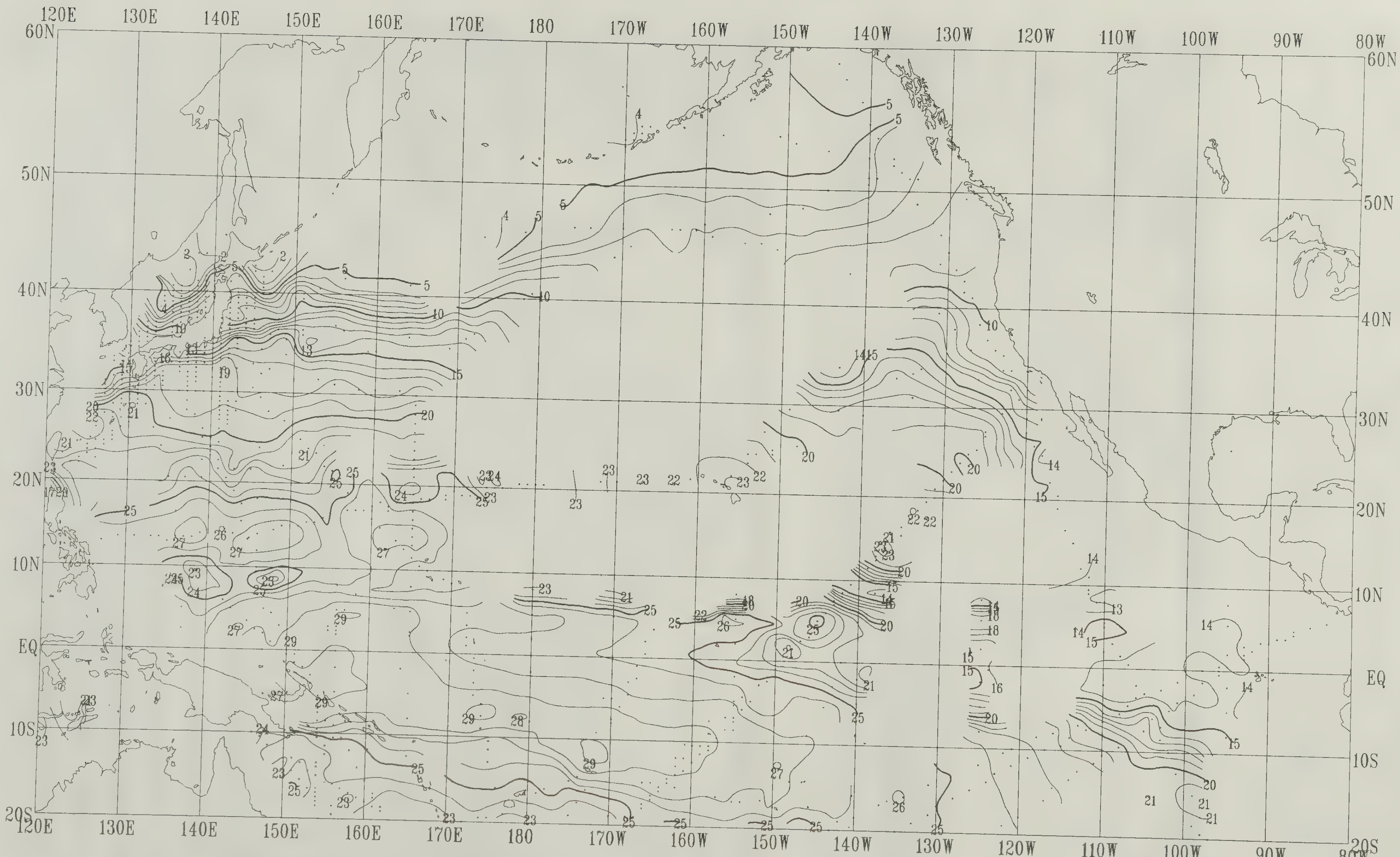
SST & Anomalies in the Global Ocean



第6図　全球月平均海面水温図（上）及び偏差図（下）（1996年 3月）

Fig.6 Monthly mean sea surface temperature over the global ocean (top) and anomalies (bottom) for MAR 1996. Anomalies are computed from the JMA climatology (1961-1990) (Marine Department of JMA, 1991, Climatic charts of sea surface temperatures of the western North Pacific and the global ocean). Contour interval is 1°C (top) and additional anomaly contours of ±0.5°C are shown as thin lines. Negative anomalies are spotted. Maximum coverage of sea ice is shaded. Data sources for sea ice are U.S. National Ice Center (polar regions) and JMA (the Sea of Okhotsk).

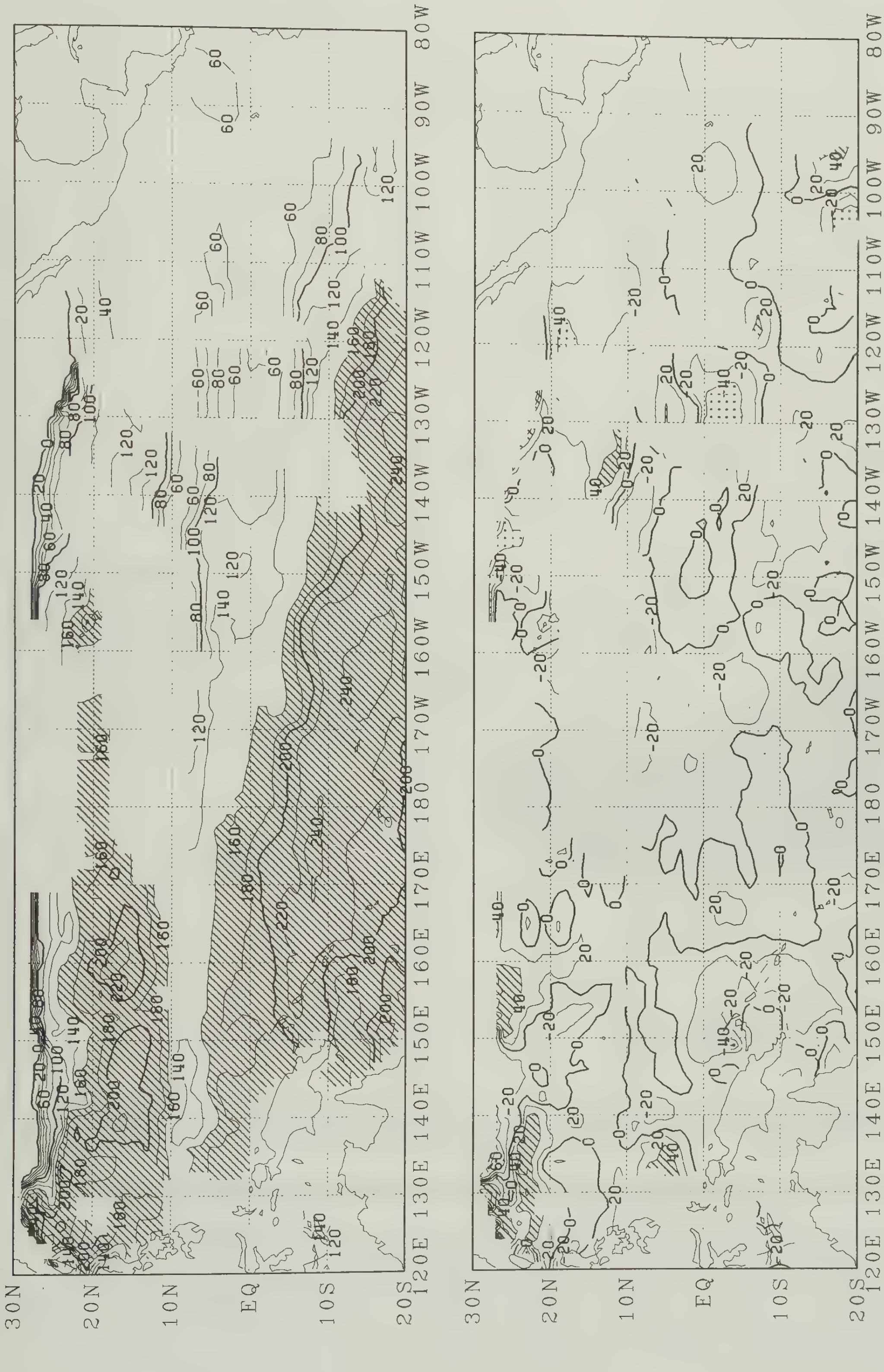
100m Temperature in the Pacific Ocean



第7図　太平洋表層水温(深さ100m)図 (1996年 3月)

Fig.7 Subsurface (100m) temperatures in the Pacific Ocean for MAR 1996.
Contour interval is 1°C. Observation points are denoted by dots.

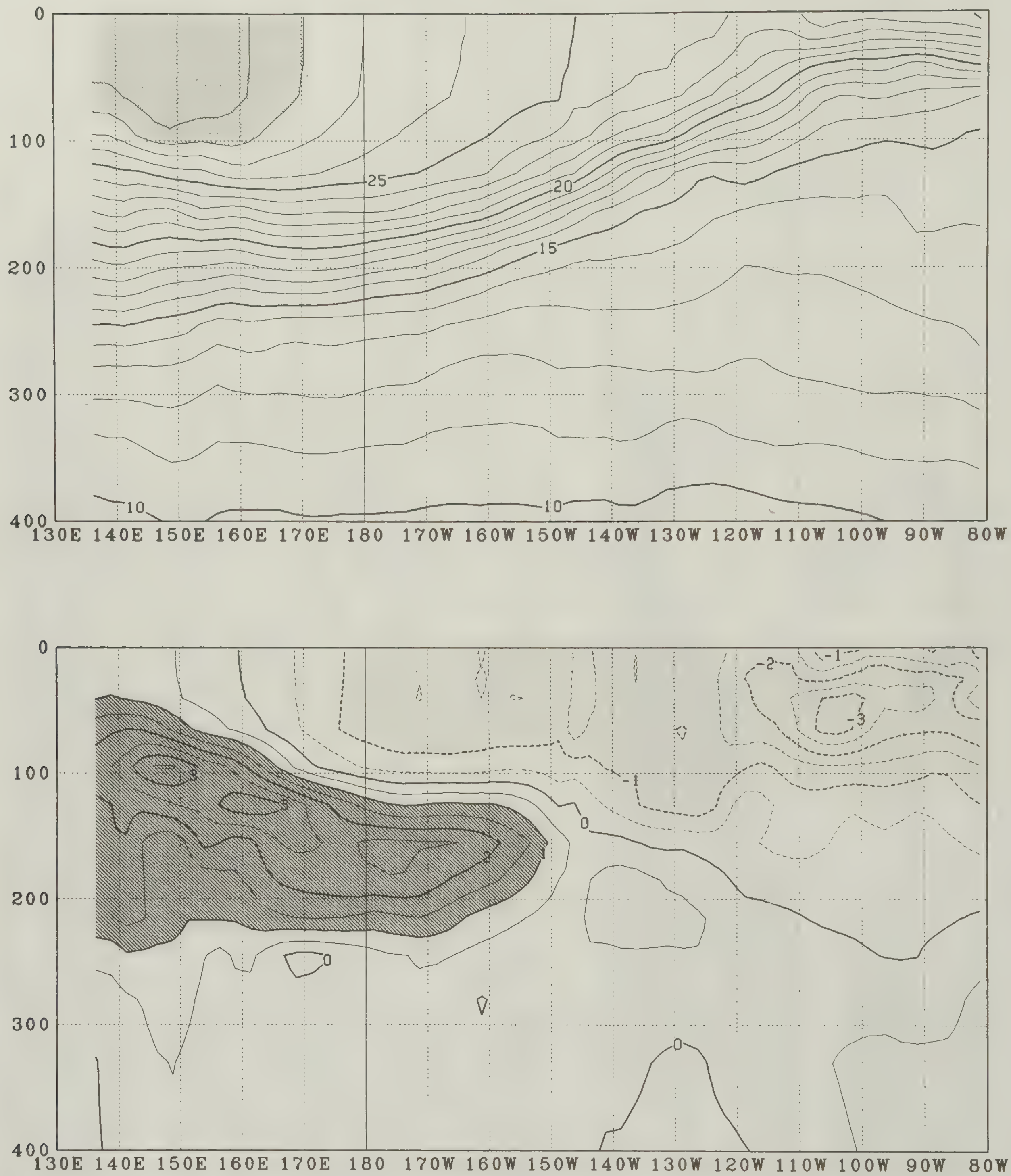
Depth of 20C & Anomalies in the Pacific Ocean



第8図　太平洋表層水温（20℃深度）図（上）及び偏差図（下）（1996年3月）

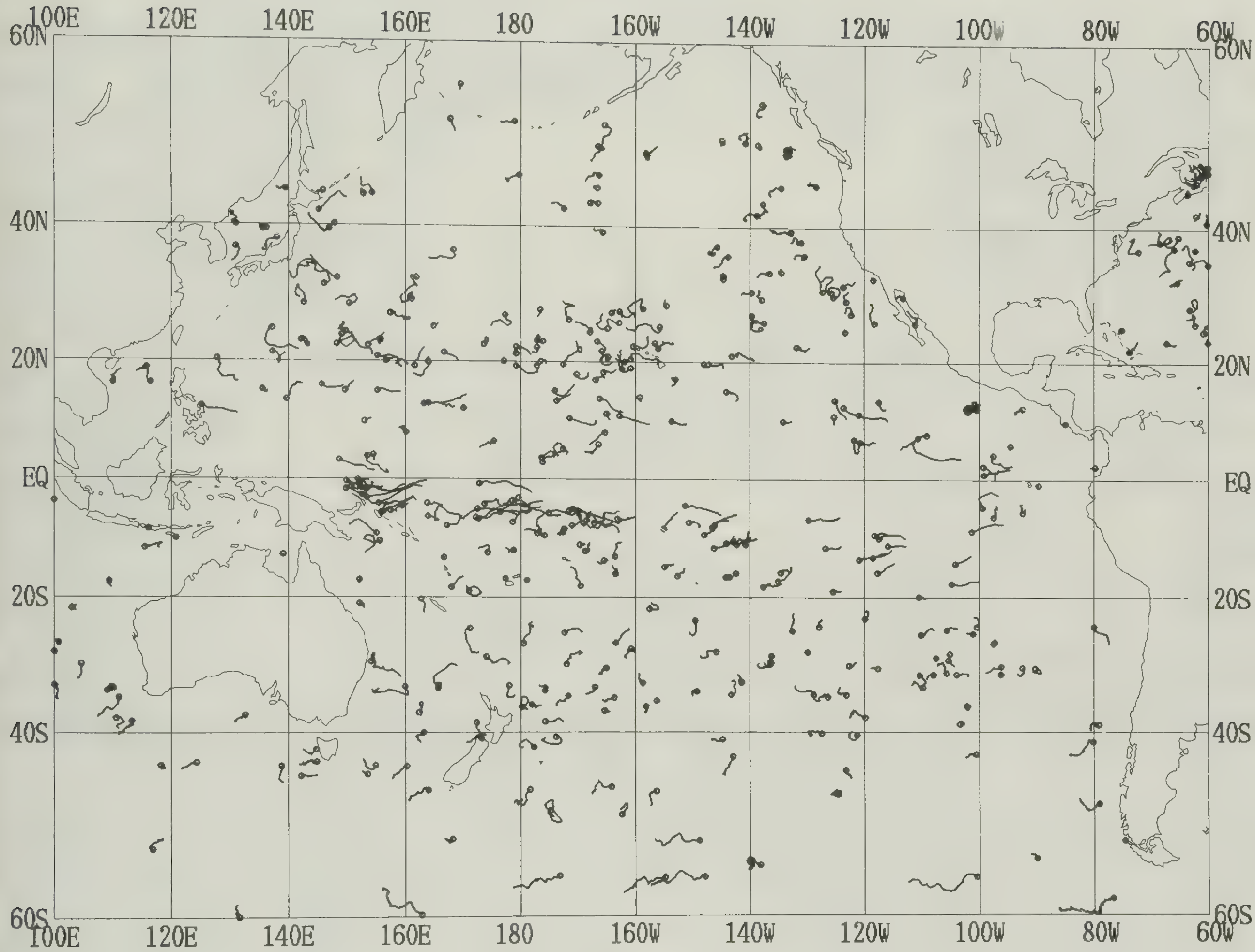
Fig.8 Depth of the 20°C isotherm in the Pacific Ocean (top) and anomalies (bottom) for MAR 1996. Anomalies are computed from the climatology (Levitus, 1982, Climatological Atlas of the World Ocean, NOAA). Contour interval is 20m. Values greater than 160m in top panel are shaded. In bottom panel values greater than +40m are shaded and values less than -40m are spotted.

Depth-Longitude Sections of Equatorial Temperature & Anomalies



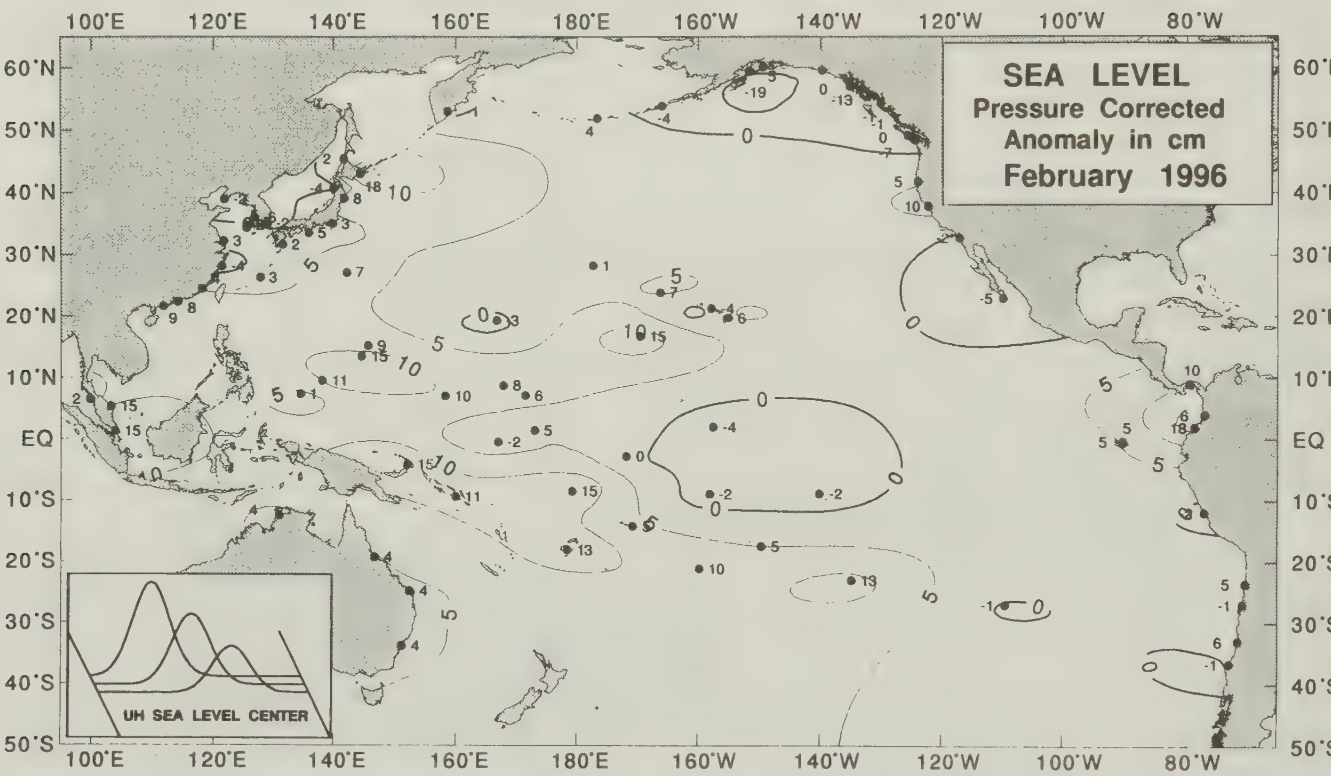
第9図　太平洋赤道に沿う表層水温（上）及び偏差（下）の深度－経度断面図（1996年 3月）

Fig.9 Depth-longitude sections of temperature (top) and anomalies (bottom) along the equator in the Pacific Ocean for MAR 1996. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (top) and 0.5°C (bottom). Values greater than 28°C in top panel are shaded. In bottom panel values greater than 1°C are shaded and values less than -1°C are spotted. Anomalies are computed from 1987-1995 base period means.



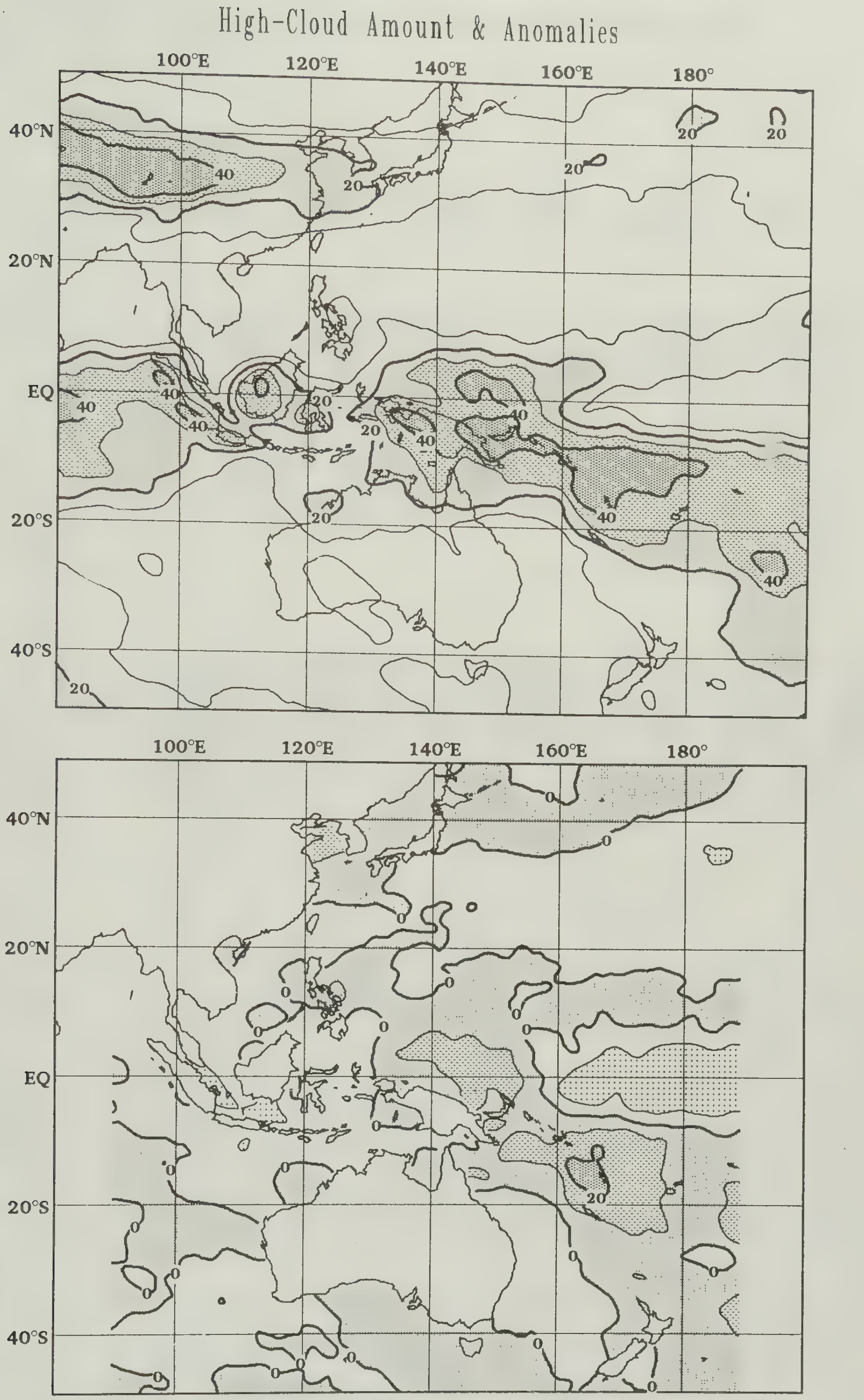
第10図　太平洋ブイ流跡図(1996年 3月)

Fig.10 Movements of drifting buoys in the Pacific Ocean during MAR 1996. Each track is for one buoy. Small circles represent last positions for the month.



第11図　太平洋海面水位偏差図（ 1996年 2月 ）

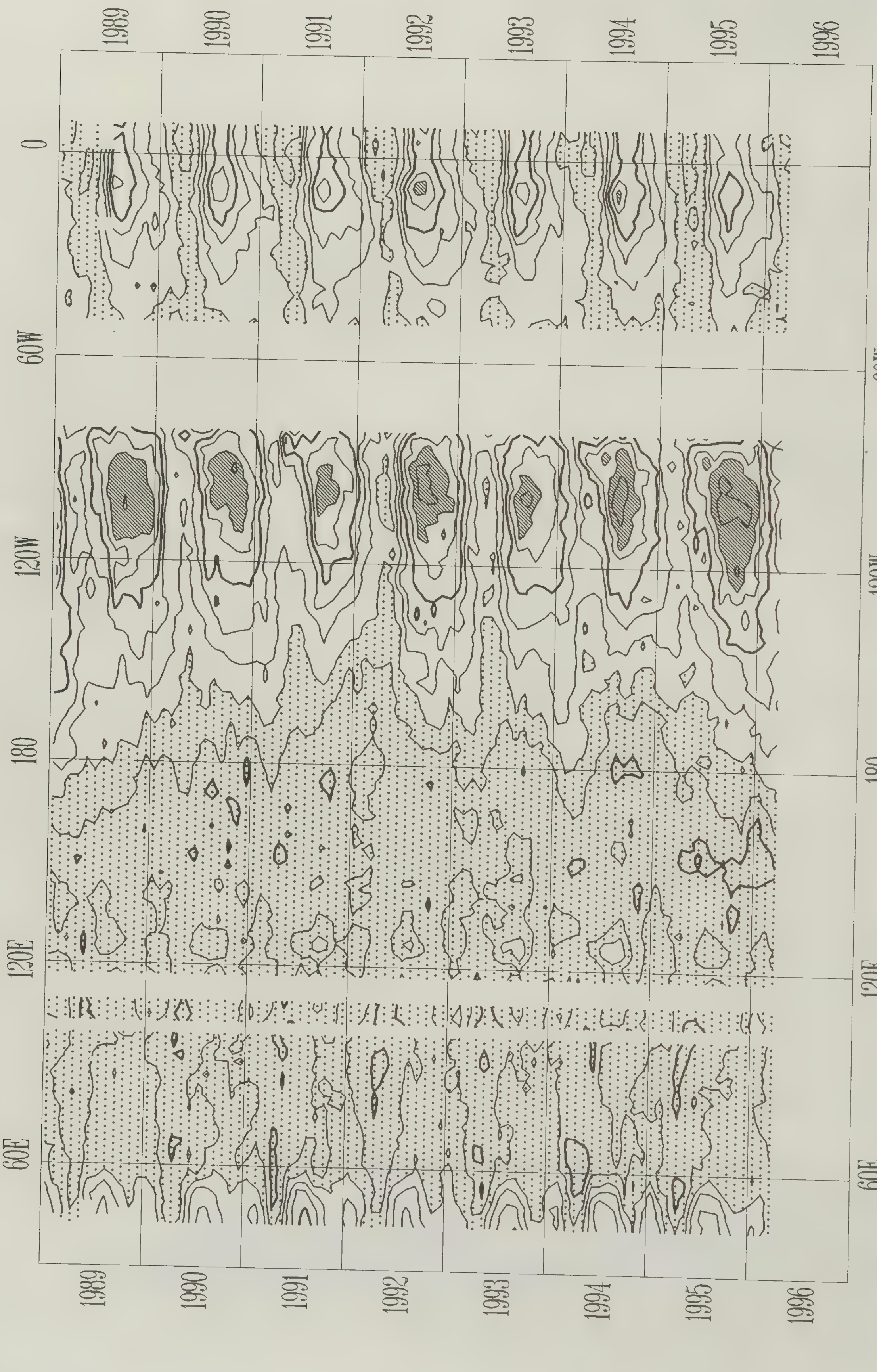
Fig.11　Monthly sea level anomalies for FEB 1996 obtained from mean sea level (1975-1986) adjusted for atmospheric pressure.
This figure is prepared by the SOC of ISLP-PAC, Dept. of Oceanography, Univ. of Hawaii.



第12図　西太平洋月平均上層雲量分布図及び偏差図（1996年 3月）

Fig.12 Monthly mean of the high-cloud amount (%, top) and its anomalies (%, bottom) in the western Pacific for MAR 1996. Contour interval is 10%. Areas above 30% are shaded (top) and positive anomalies are stippled (bottom). Anomalies are computed from 1978-1990 base period means. Figures are prepared by the Long-range Forecast Division of JMA.

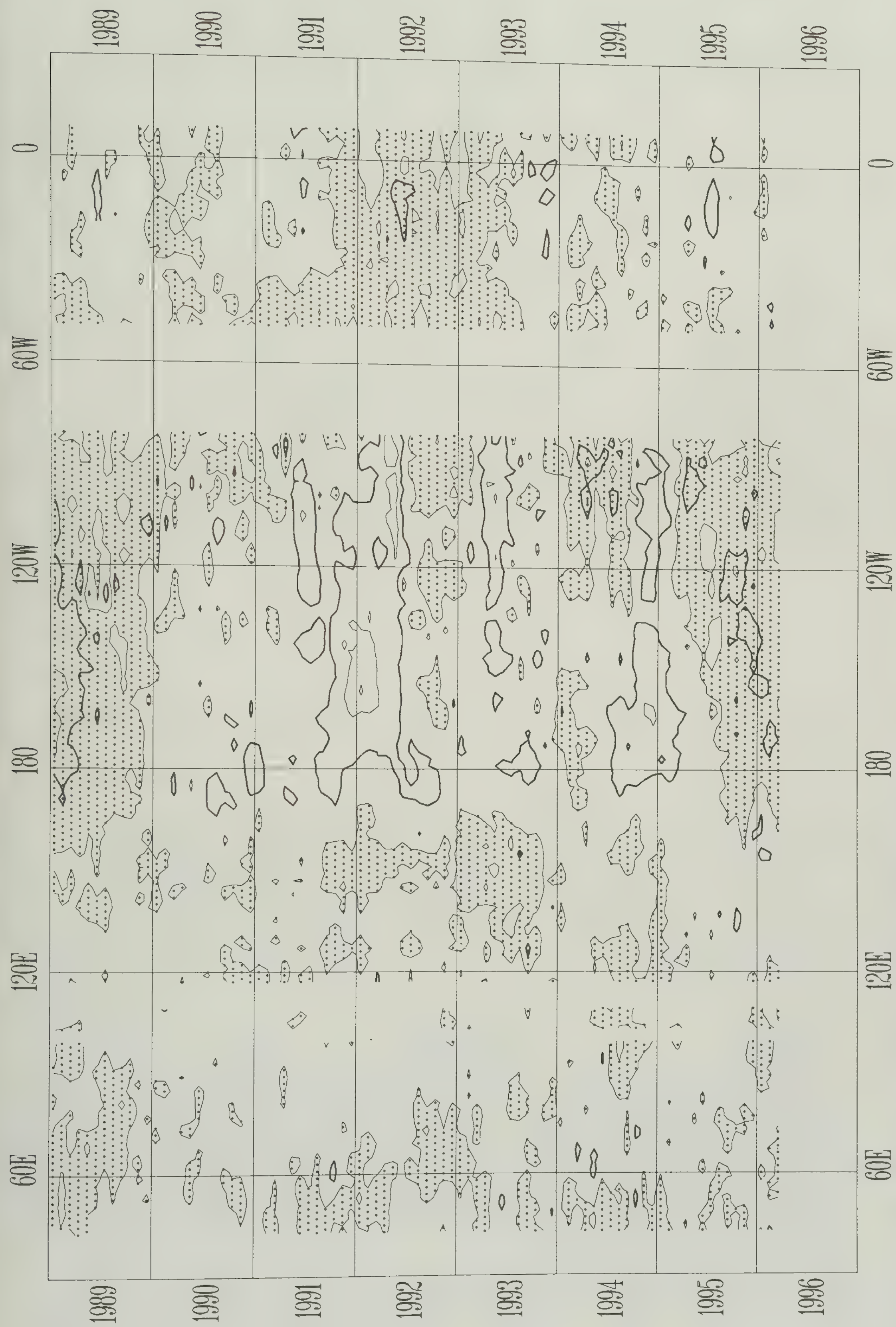
Time-Longitude Section of SST



第13図　赤道に沿う海面水温の時間－経度断面図

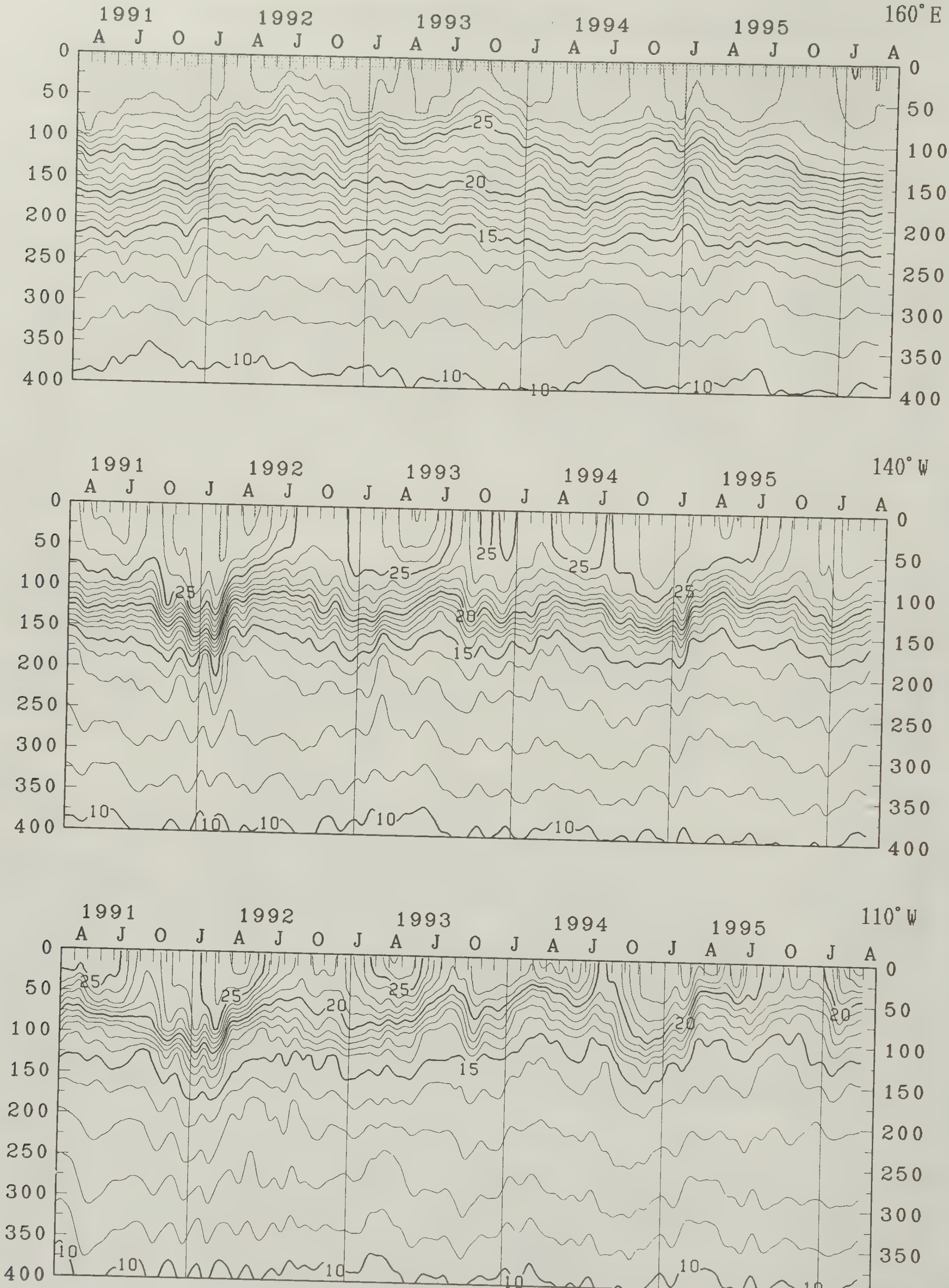
Fig.13 Time-longitude section of SSTs along the equator (2°N-2°S) in the global ocean. Contour interval is 1°C, with thick contour lines at 25 and 30°C. SST values greater than 28°C are spotted and values less than 23°C are shaded.

Time-Longitude Section of SST Anomalies



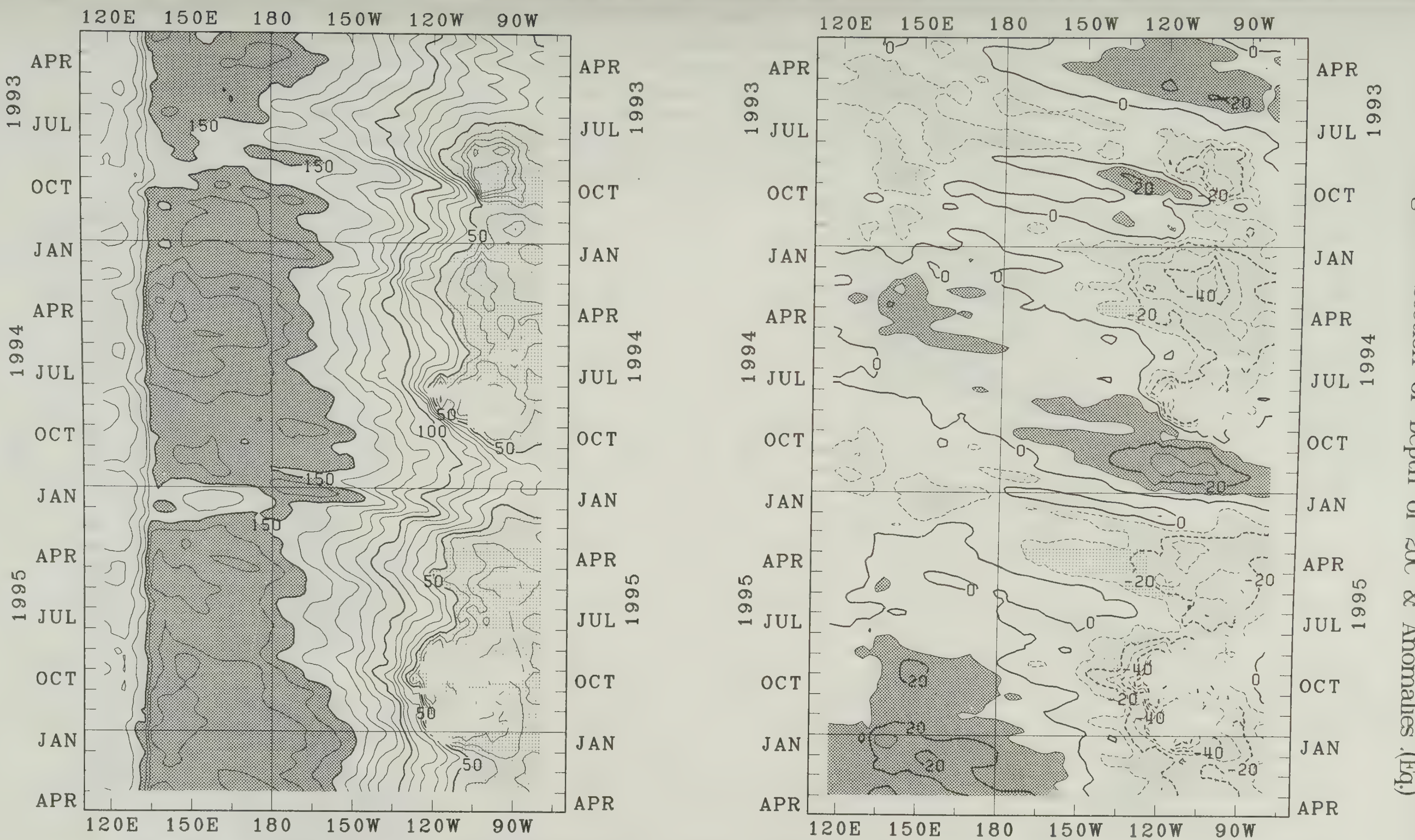
第14図　赤道に沿う海面水温偏差の時間－経度断面図

Fig.14 Time-longitude section of SST anomalies along the equator (2°N-2°S) computed from the JMA climatology (1961-1990). Contour interval is 1°C, with thick contour lines at +1°C and -1°C. Negative anomalies are spotted.



第15図　太平洋赤道域の表層水温の時間－深度断面図
(上：西部、中：中部、下：東部)

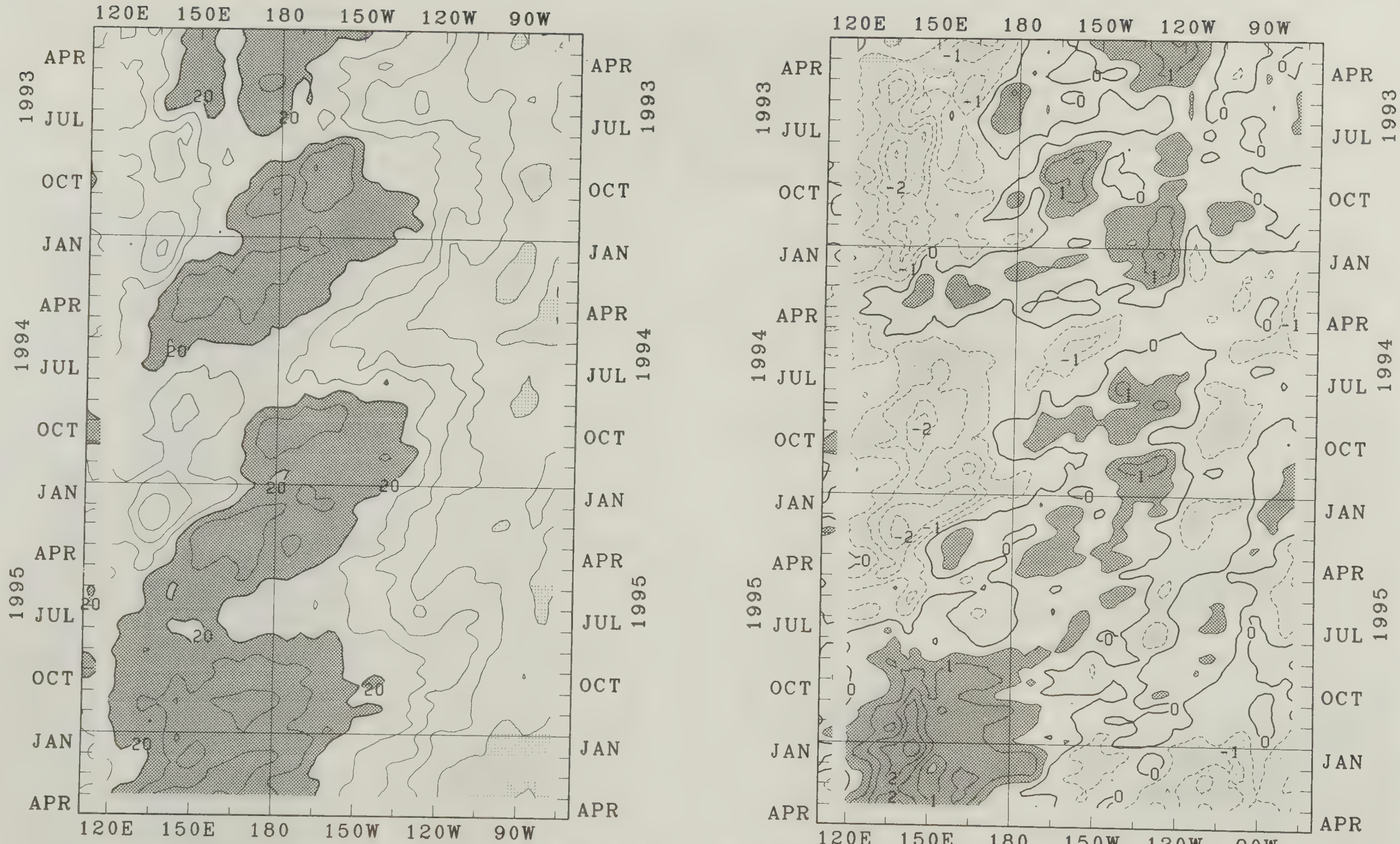
Fig.15 Time-depth sections of equatorial subsurface temperature for the western Pacific (top, 160°E), the central Pacific (middle, 140°W) and the eastern Pacific (bottom, 110°W). Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C. Values greater than 28°C are shaded.



第16図　太平洋の赤道に沿う20℃深度（左）及び偏差（右）の時間－経度断面図

Fig.16 Time-longitude sections of depth of the 20°C isotherm along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 10m. Values in left panel greater than 150m are shaded and values less than 50m are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

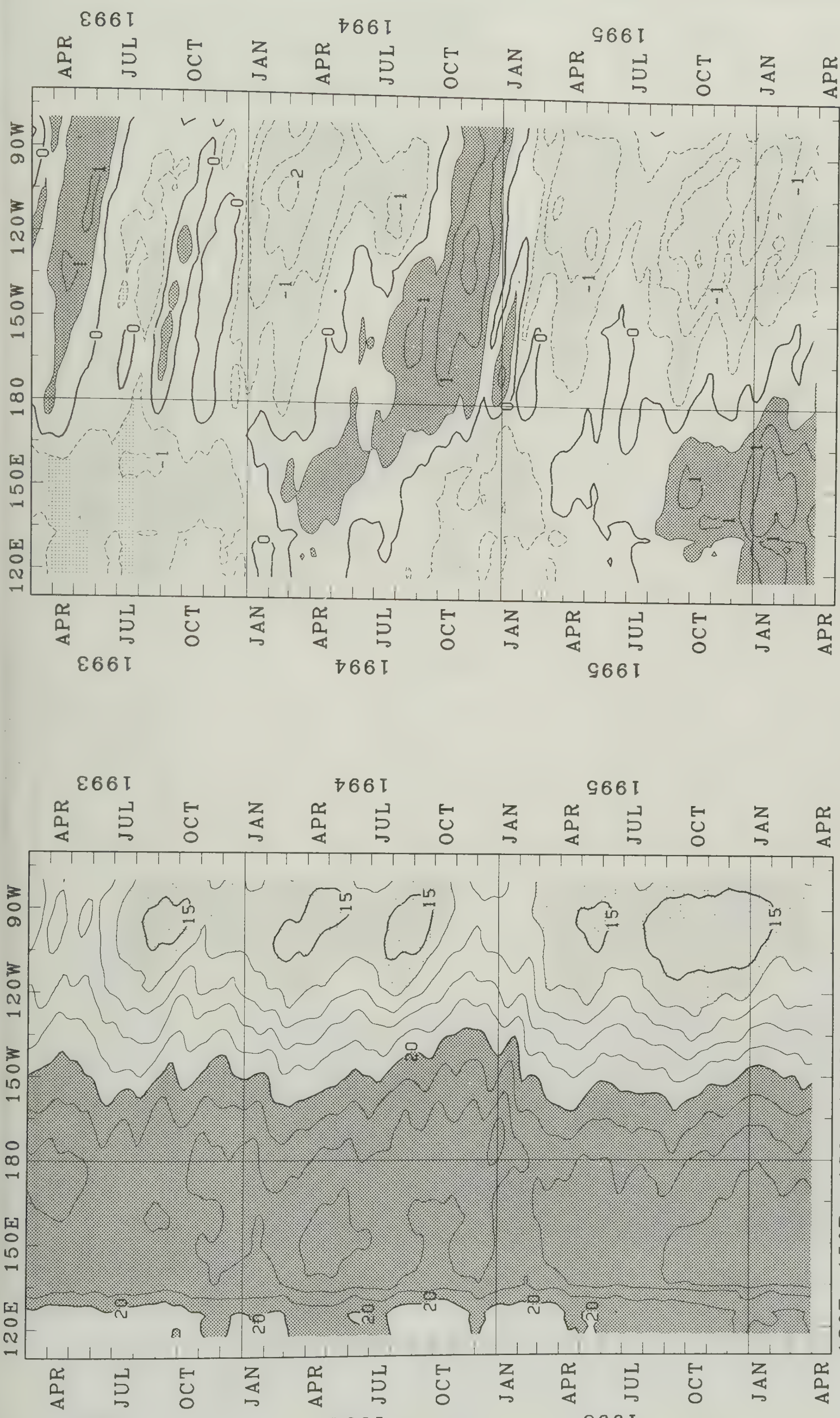
Time-Longitude Section of Ocean Heat Content & Anomalies (6N)



第17図　太平洋の北緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig.17 Time-longitude sections of ocean heat content in the upper 260m along 6°N (left) and anomalies (right) in the Pacific Ocean. Data are derived from an Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

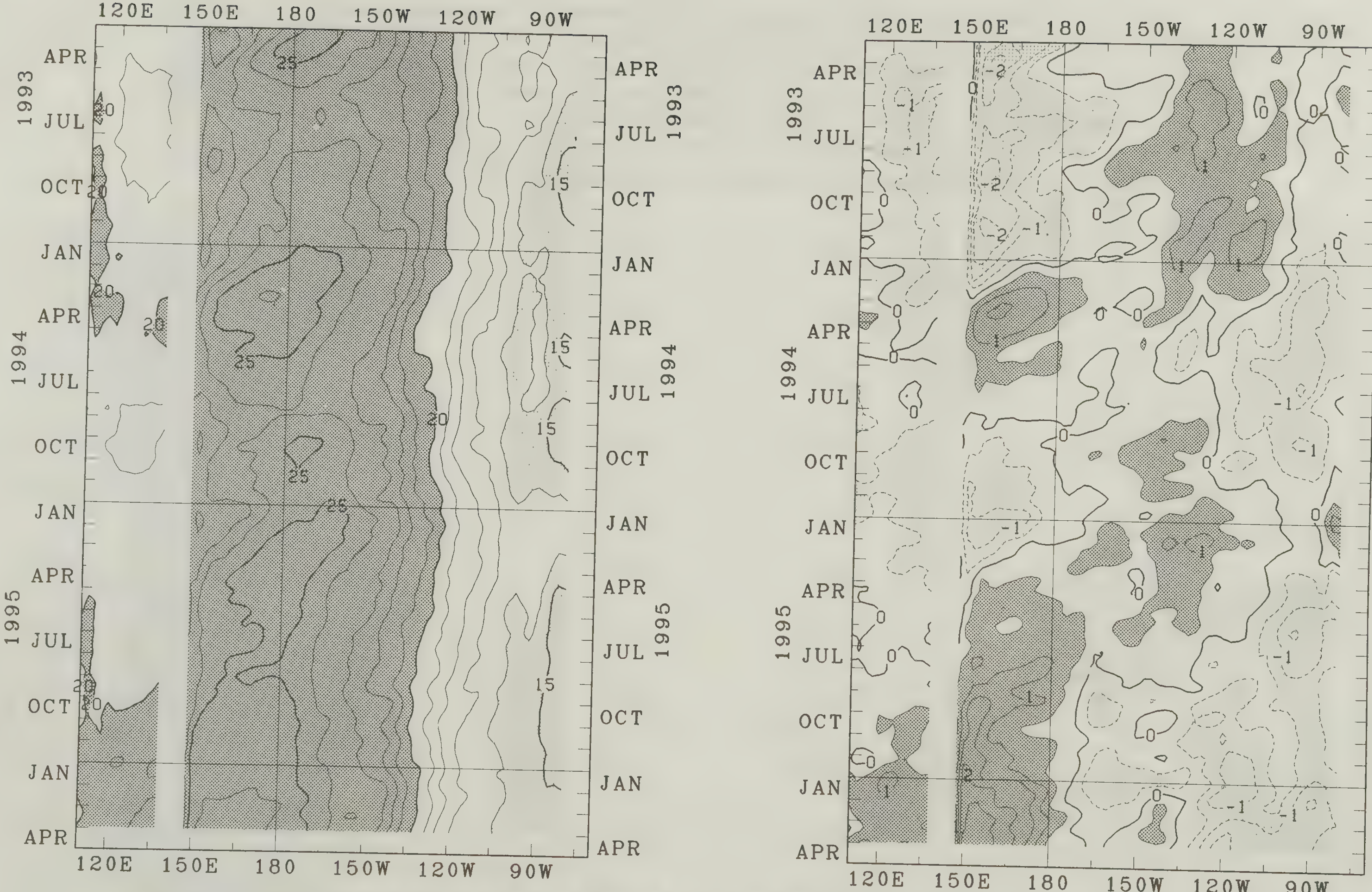
Time-Longitude Section of Ocean Heat Content & Anomalies (Eq.)



第18図　太平洋の赤道に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

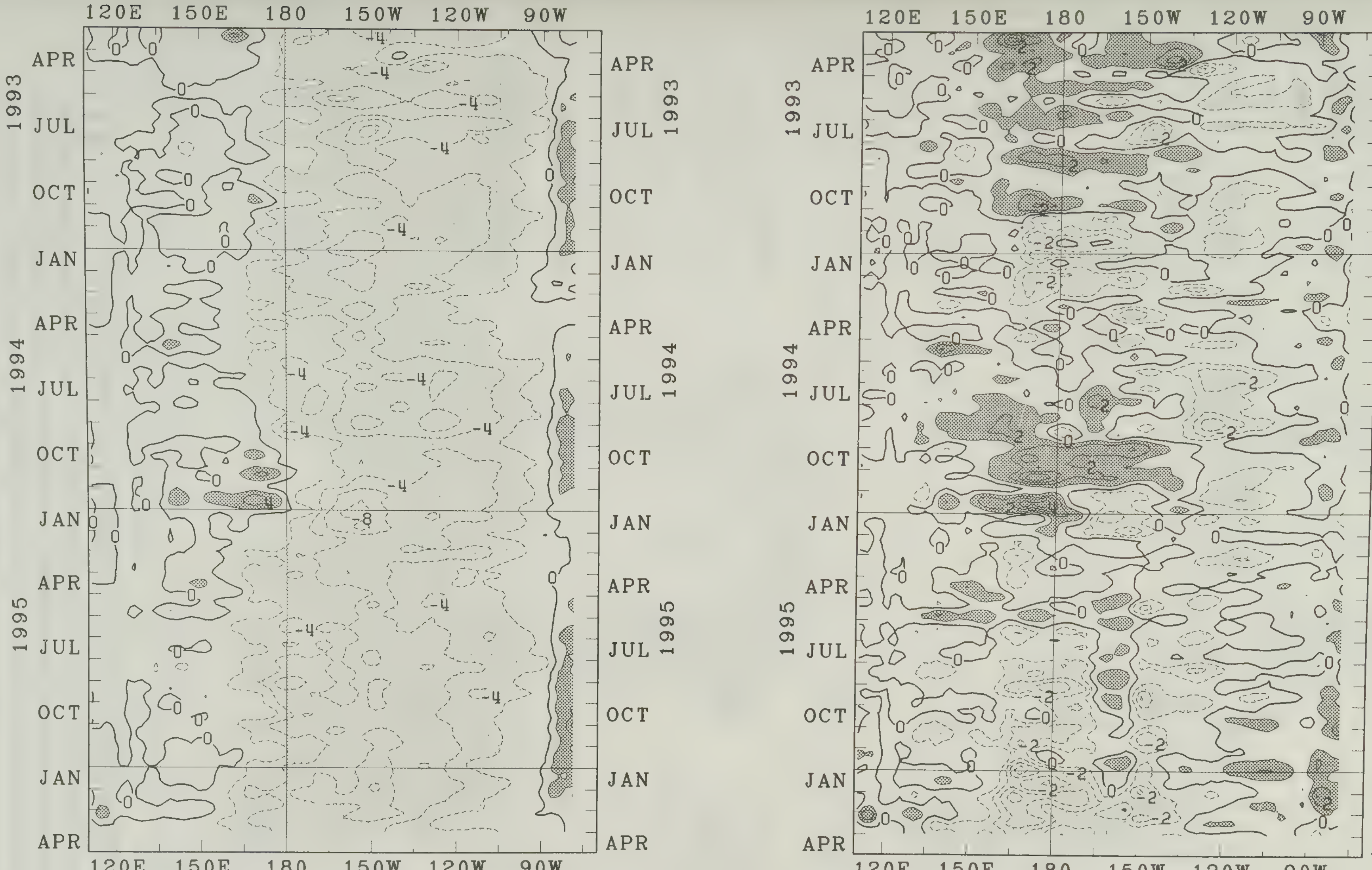
Fig.18 Time-longitude sections of ocean heat content in the upper 260m along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

Time-Longitude Section of Ocean Heat Content & Anomalies (6S)



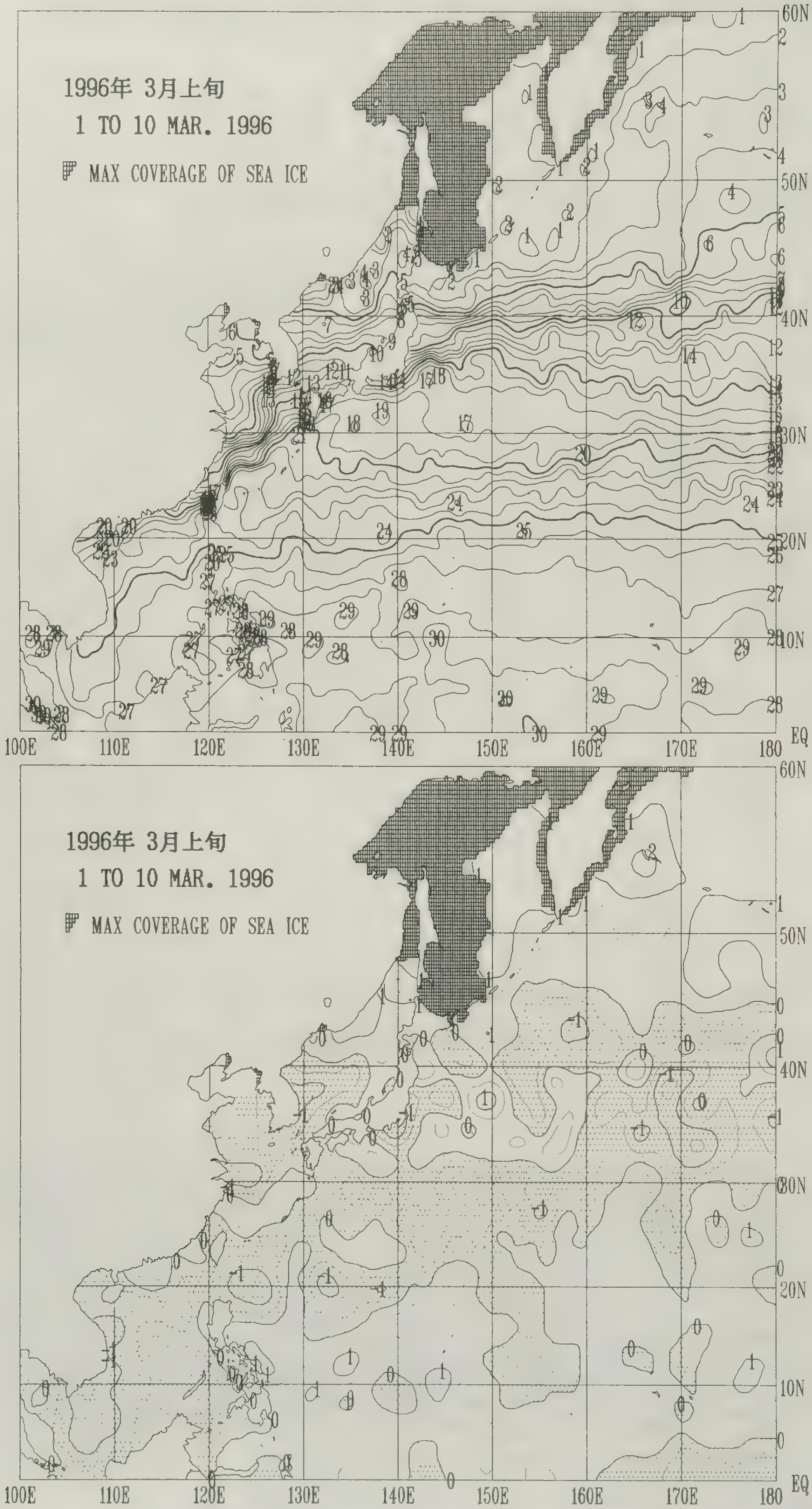
第19図　太平洋の南緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig.19 Time-longitude sections of ocean heat content in the upper 260m along 6°S (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right) Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.



第20図　太平洋の赤道に沿う海面の風応力の東西成分（左）及び偏差（右）の時間－経度断面図

Fig.20 Time-longitude sections of surface zonal wind stress along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Atmospheric Global Data Assimilation System of JMA. Contour interval is 0.02N/m2 (left) and 0.01N/m2 (right). Dashed contours indicate easterlies (left) and easterly anomalies (right). Anomalies are computed from 1987-1995 base period means.



旬平均沿岸水温(℃)
Coastal Water Temperature

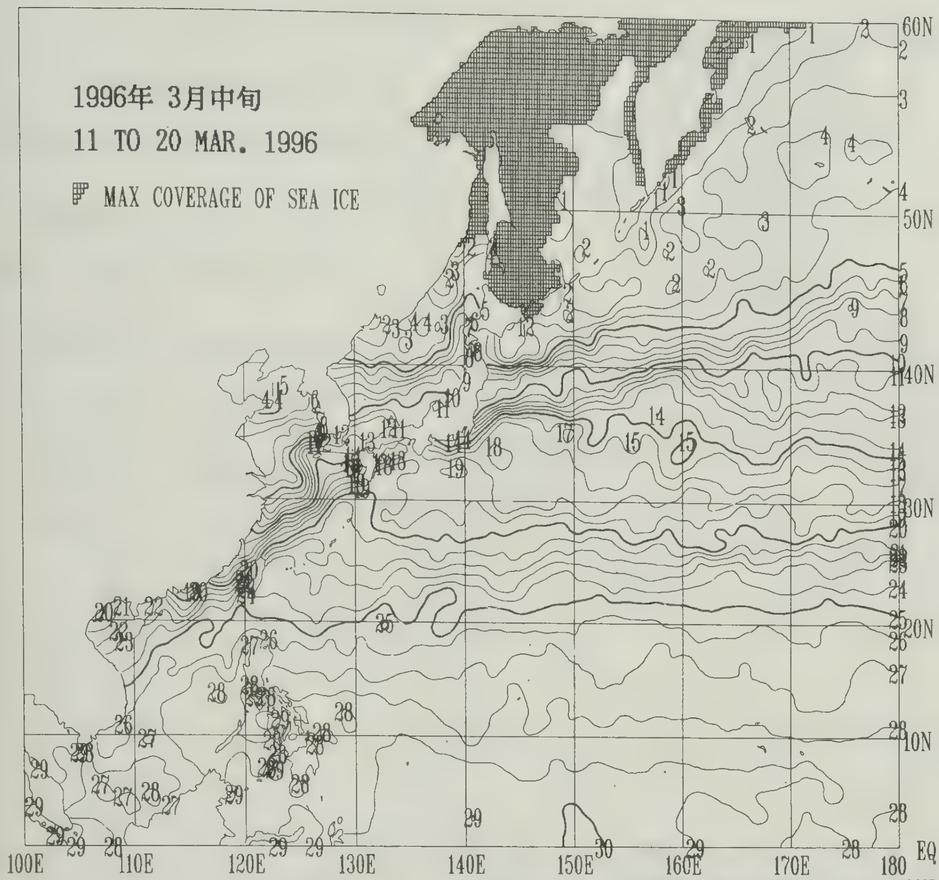
地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島(47918)	21.6	+0.4
御前崎(47655)	10.0	-1.1
八丈島(47678)	15.6	-0.9
小名浜(47598)	7.2	-1.6
宮 古(47585)	4.1	-1.8
江 差(47428)	5.7	-
浜 田(47755)	11.1	-

海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

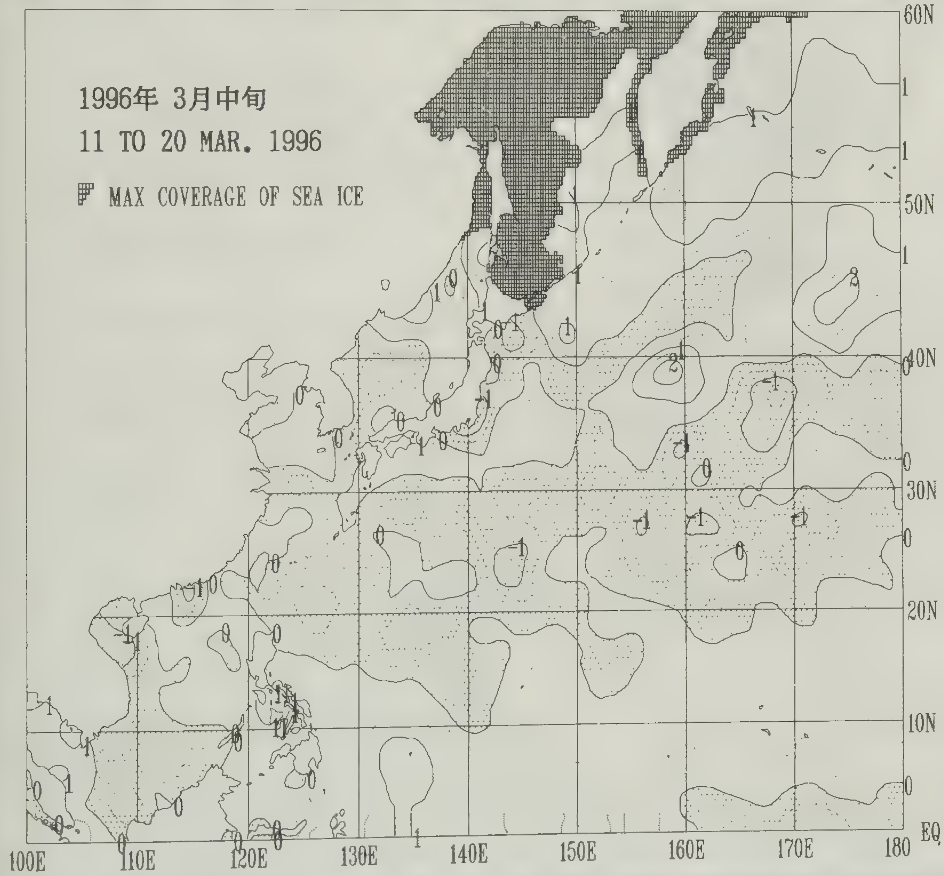
日本海	37.9N,134.5E	9.4
四国沖	29.0N,135.0E	19.0
東シナ海	28.2N,126.3E	20.4

第21図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 3月上旬)

Fig.21 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 1st ten-day period in MAR 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



旬平均沿岸水温(℃) Coastal Water Temperature		
地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島(47918)	22.0	+0.1
御前崎(47655)	11.0	-0.8
八丈島(47678)	17.9	+0.7
小名浜(47598)	7.4	-1.5
宮 古(47585)	4.6	-1.0
江 差(47428)	6.7	-
浜 田(47755)	11.6	-

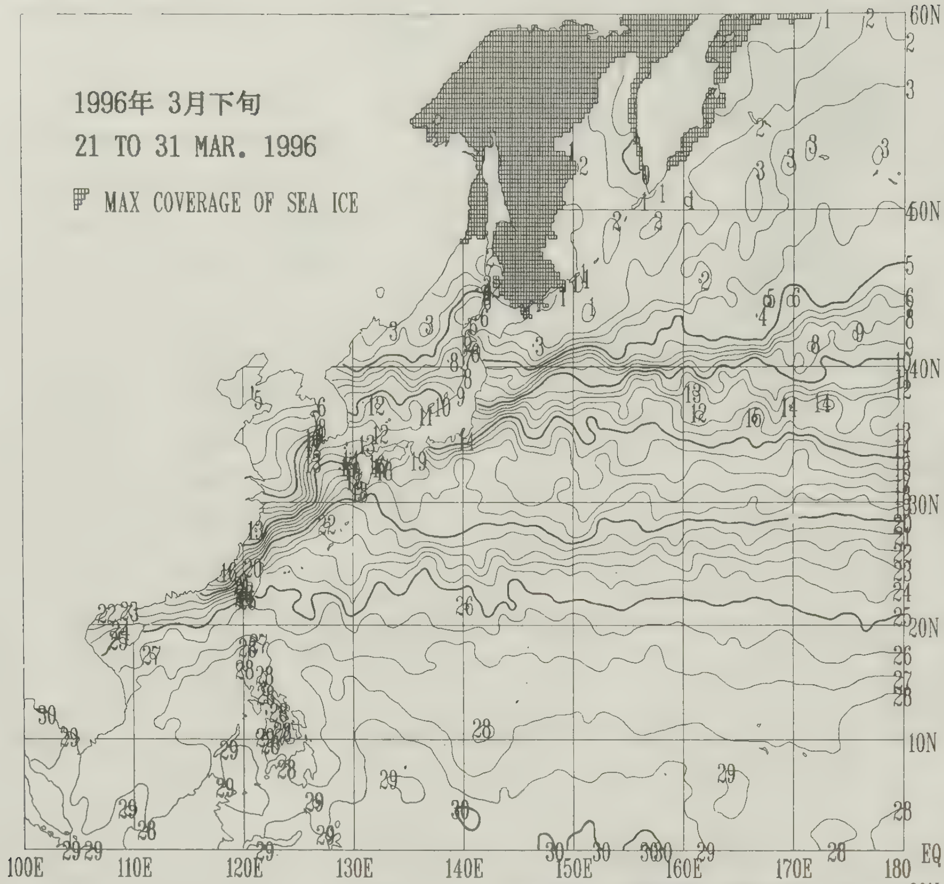


海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

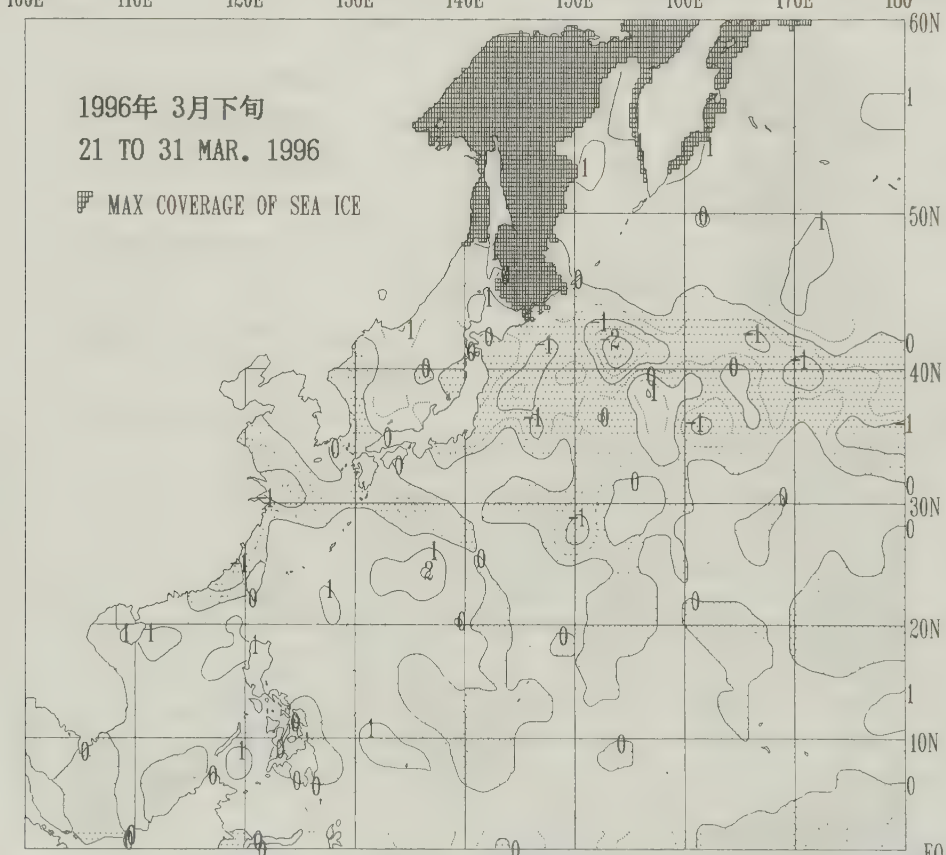
日本海	37.9N,134.5E	8.9
四国沖	29.0N,135.0E	18.3
東シナ海	28.2N,126.3E	19.8

第22図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 3月中旬)

Fig.22 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 2nd ten-day period in MAR 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



旬平均沿岸水温(℃) Coastal Water Temperature		
地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島(47918)	23.9	+1.6
御前崎(47655)	12.5	-0.2
八丈島(47678)	18.8	+1.3
小名浜(47598)	7.7	-1.2
宮　古(47585)	5.6	-0.1
江　差(47428)	6.2	-
浜　田(47755)	12.6	-

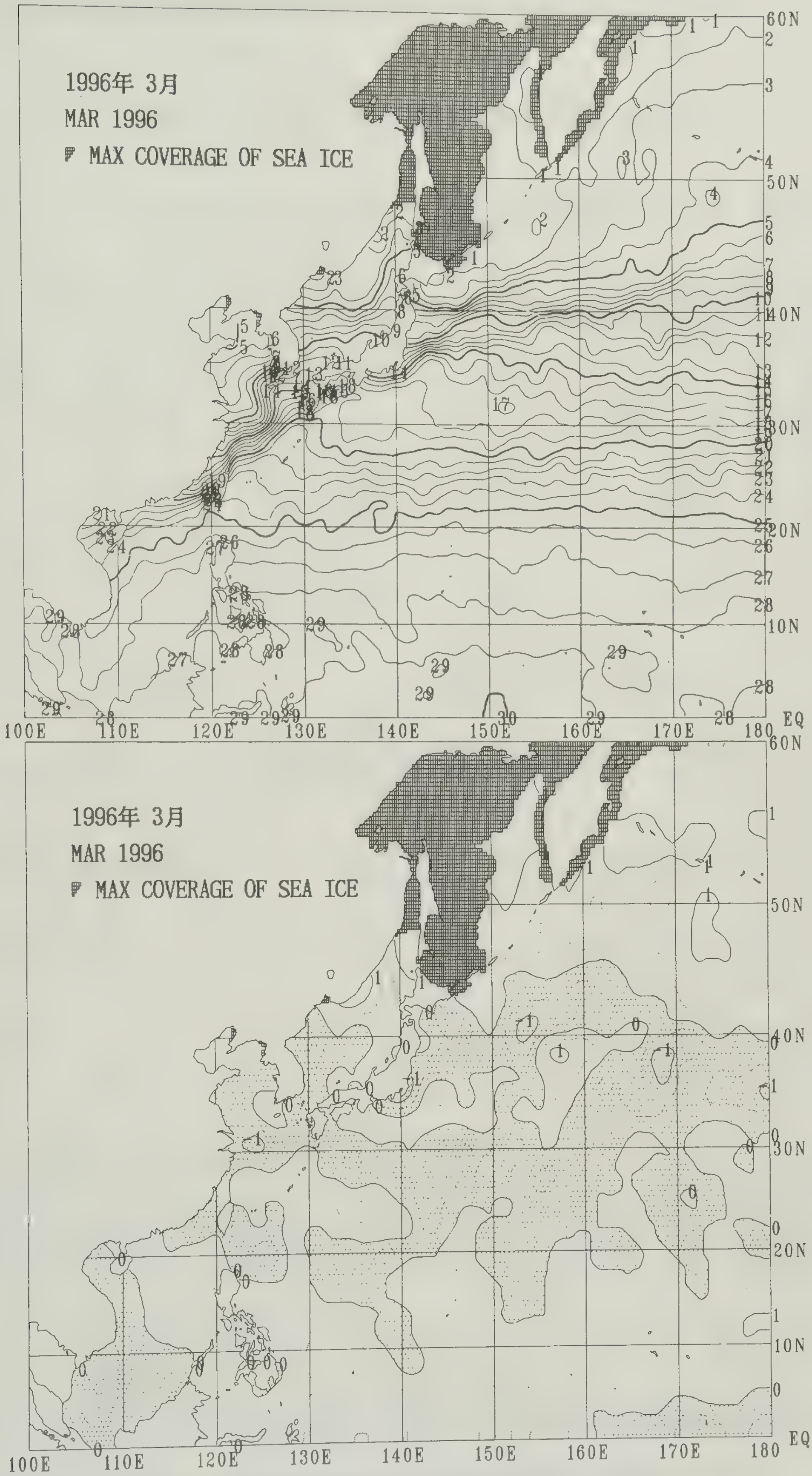


海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

日 本 海 37.9N,134.5E	9.3
四 国 沖 29.0N,135.0E	18.6
東シナ海 28.2N,126.3E	21.0

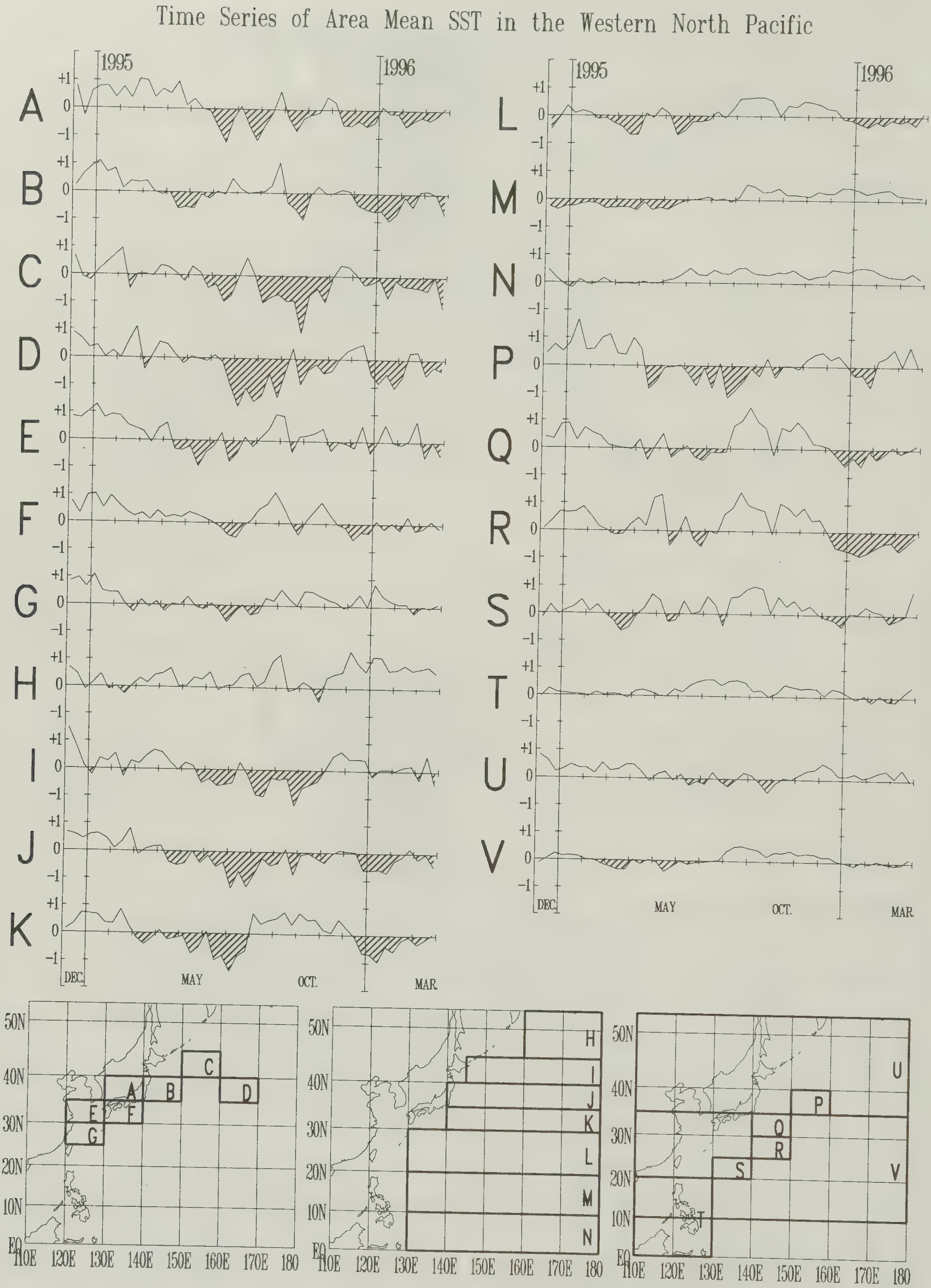
第23図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 3月下旬)

Fig.23 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 3rd ten-day period in MAR 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



第24図 北西太平洋月平均海面水温図(上)及び偏差図(下)(1996年 3月)

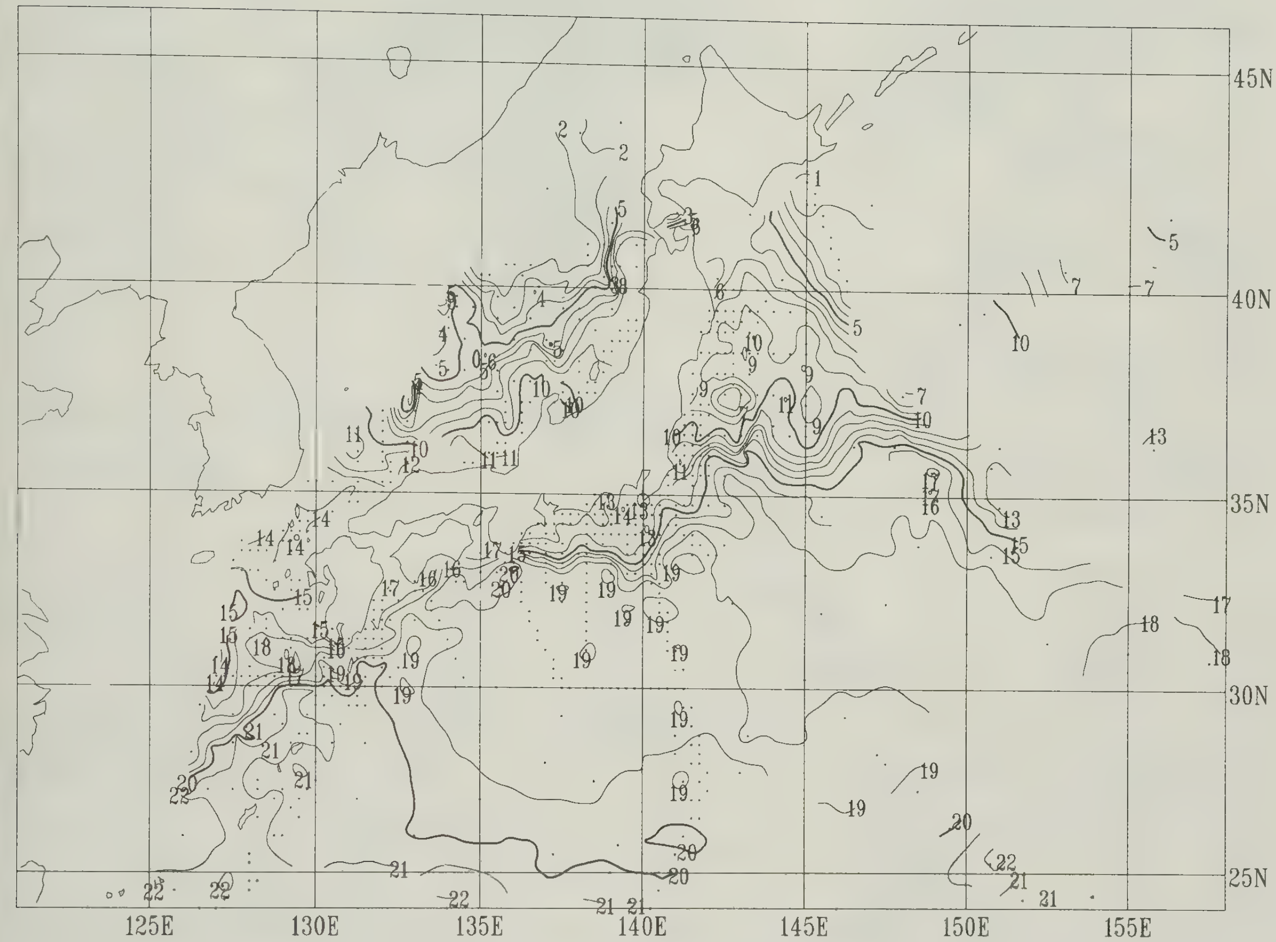
Fig.24 Monthly mean SSTs in the western North Pacific (top) and anomalies (bottom) for MAR 1996. Anomalies are computed from the JMA climatology (1961-1990). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



第25図　北西太平洋旬平均海面水温平年偏差時系列図

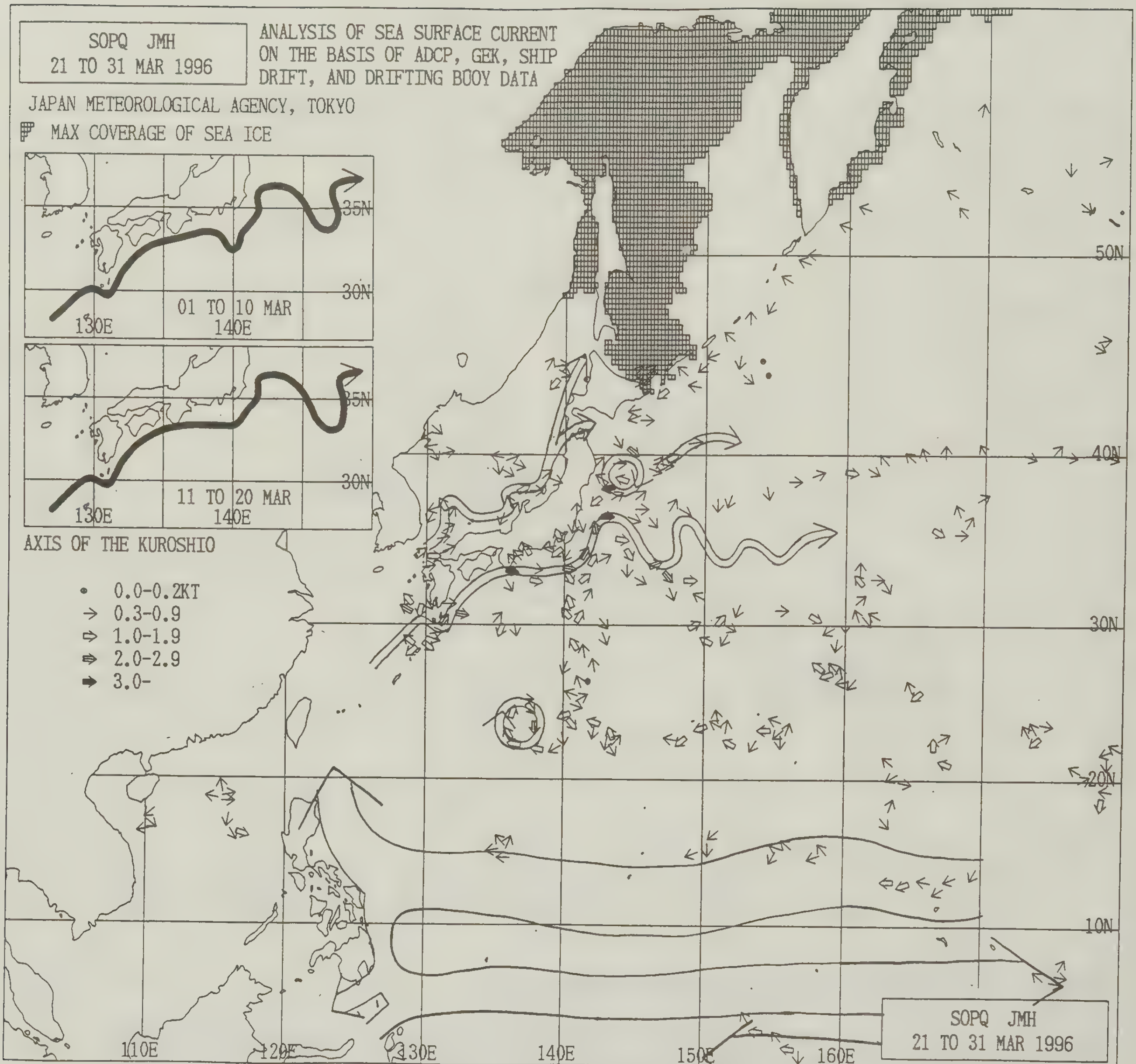
Fig.25 Time series of the ten-day mean sea surface temperature anomalies (°C) in the western North Pacific for the areas indicated at the bottom. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1961-90).

100m Temperatures in Seas Adjacent to Japan



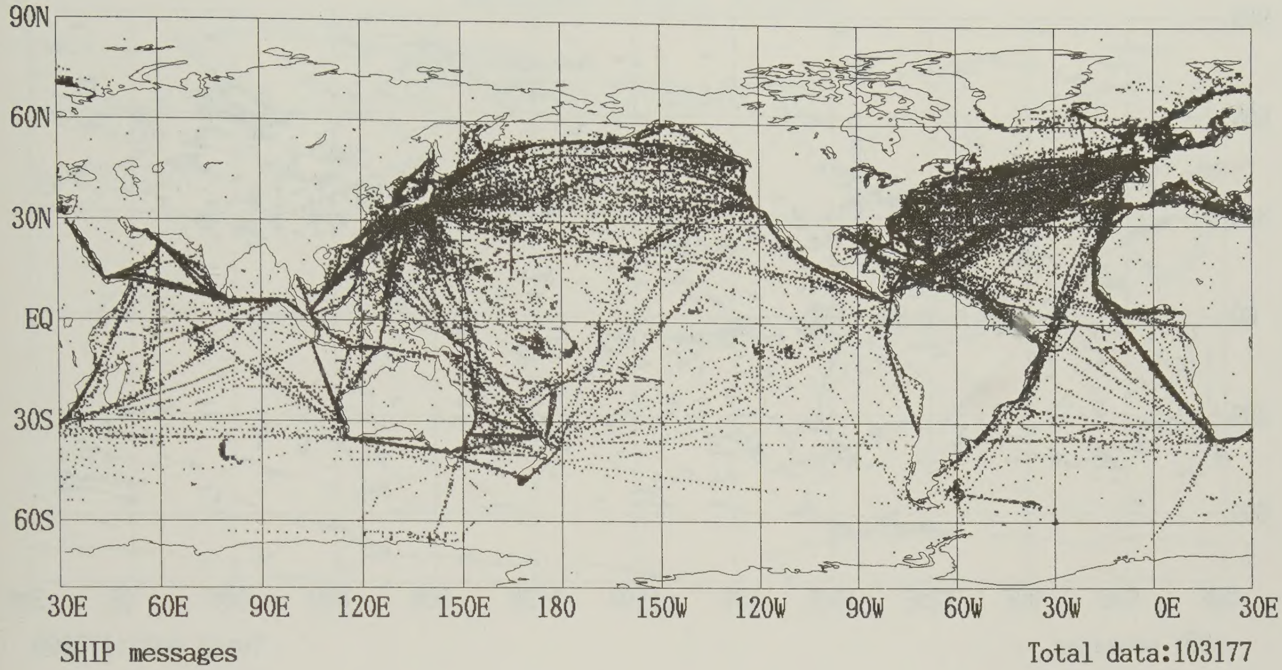
第26図　日本近海表層水温(深さ100m)図 (1996年 3月)

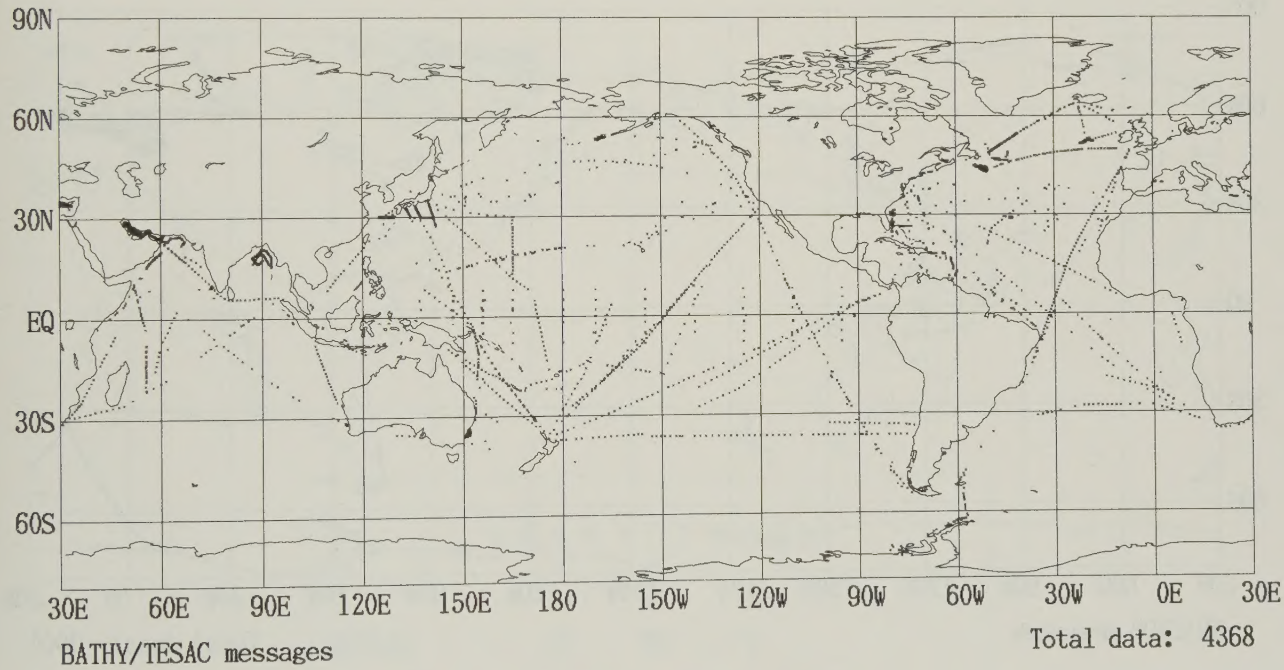
Fig.26　Subsurface (100m) temperatures in seas adjacent to Japan for MAR 1996. Contour interval is 1°C.　Observation points are denoted by dots.



第27図　北西太平洋海流図（1996年 3月下旬）

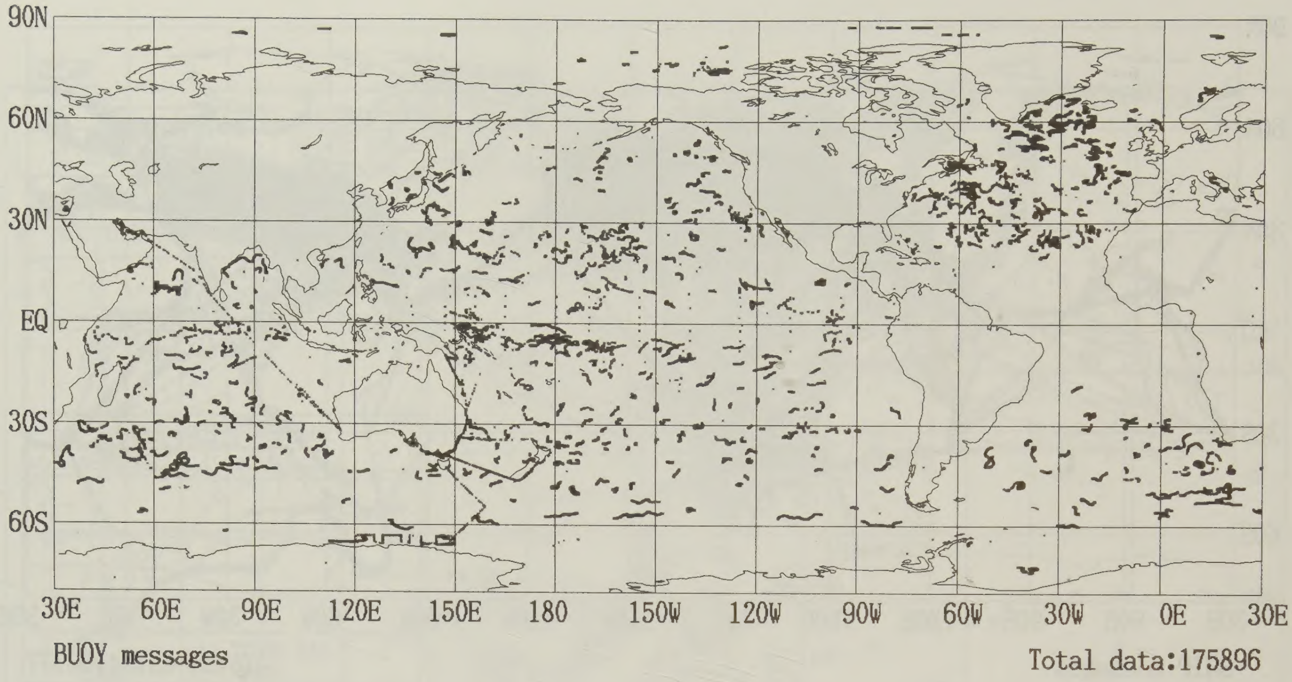
Fig.27 Analysis of the sea surface current in the western North Pacific for the 3rd ten-day period in MAR 1996. Small arrows indicate sea surface currents measured with acoustic Doppler current profilers, GEKs deployed in research vessels, and ship drift by merchant ships/drifting buoys during the month. Major currents such as the Kuroshio and the North Equatorial Current

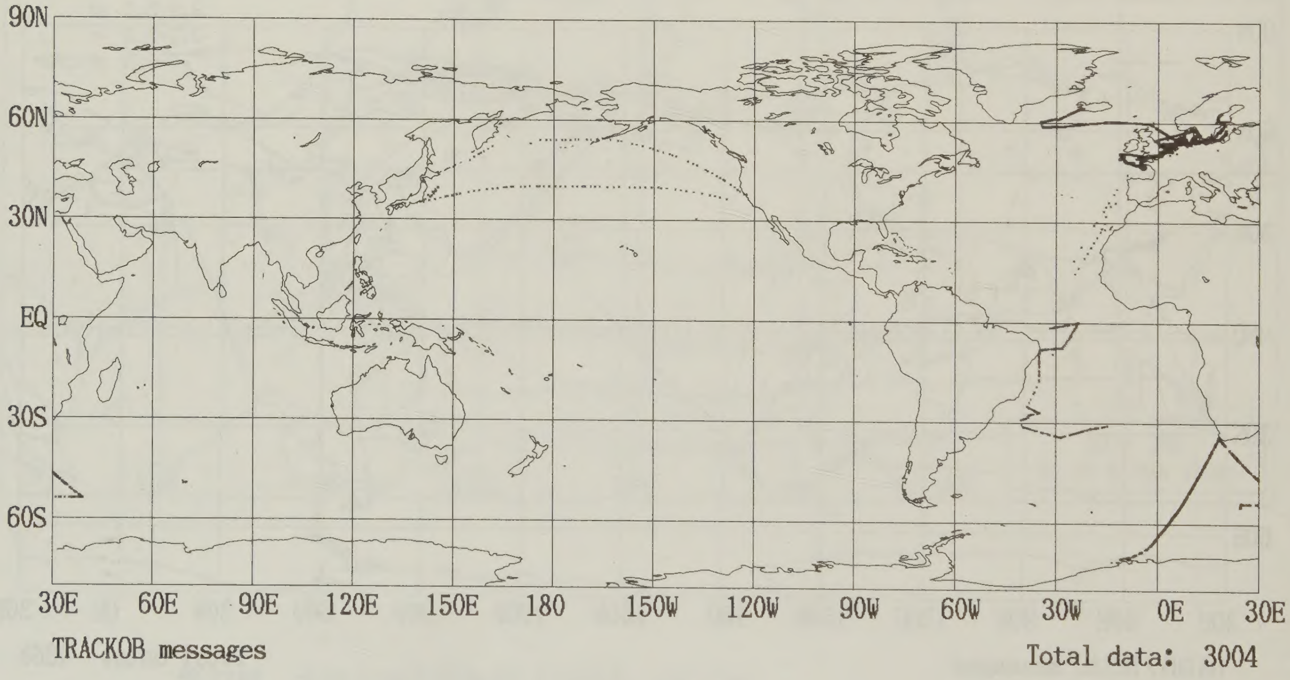




第28-1図 測点分布図(1996年 3月)

Fig.28-1 Geographical distribution of SHIP messages (SST data, top) and BATHY/TESAC messages (subsurface temperature data, bottom) for MAR 1996.





第28-2図　測点分布図(1996年 3月)

Fig.28-2 Geographical distribution of BUOY messages (buoy drift and SST data, top) and TRACKOB messages (ship drift and SST data, bottom) for MAR 1996.

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